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Arthur T. McCormack, M. D.

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COUNTY SOCIETY REPORTS

Hardin: The regular monthly meeting of the Hardin County Medical Society was held at the office of Dr. McClure on Nov. 8, 1923, with the following members present:

C. C. Carroll, White Mills; H. R. Nusz, Cecilia; C. W. Rogers, Rineyville; E. W. Montgomery and J. R. Cowherd, Vine Grove; C. Z. And, Louisville and J. C. Mobley, R. T. Layman, J. M. English, W. F. Alvey, D. E. McClure, Elizabethtown.

There were reports and discussions of several interesting cases after which the following officers were elected for the ensuing year: E. W. Montgomery, President; J. M. English, Vice President; D. E. McClure, Secretary-Treasurer; J. C. Mobley, Censor; D. E. McClure, Delegate and H. R. Nusz, Alternate.

J. M. English, Carroll and McClure were appointed a committee to draft resolutions on the death of Dr. Strother of Owensboro, who was formerly a member of this society.

The meeting adjourned at 3:00 P. M., after all expressed the opinion that all had spent a profitable day.

D. E. McCLURE, Secretary.

Grayson: At a meeting of the Grayson County Medical Society in Leitchfield August the 15th, the following resolutions were introduced and passed unanimously:

First, Resolved that we the members of the Grayson County Medical Society by reason of his long training and remarkable ability—recognize in the person of Dr. A. T. McCormack one who is eminently fitted for the task of guiding and directing the affairs of the Kentucky State Medical Association and the State Board of Health of Kentucky.

Second, Resolved that we hereby extend to him a vote of confidence of this Society for his devotion and untiring efforts in the upbuilding of our fraternity in the past and the gigantic strides made in Kentucky State medicine and the State Board of Health under his guidance.

Third, Resolved that he be urged and requested to stand for re-election at the coming State meeting and that we pledge our unqualified support to him.

B. C. WILSON,
C. L. SHERMAN,
Committee.



DR. J. N. McCORMACK

CHIEF HEALTH OFFICER FOR KENTUCKY, 1878-1922

CHAIRMAN OF THE COMMITTEE ON ORGANIZATION OF THE AMERICAN MEDICAL ASSOCIATION

TO THE KENTUCKY MEDICAL JOURNAL, NOVEMBER, 1922

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A VETERAN ON THE FIRING LINE.

To say of Dr. Joseph Nathaniel McCormack, whose death is recorded in another column, that he belonged to another day is hardly to do justice to that distinguished and most useful man of medicine, for there was at all times no man more fully abreast of his era, more completely in the medical movement. But it is true none the less that with him we may fitly close an epoch and mark a date.

To the closing of that epoch no man in the United States contributed more valiantly than did this great physician who was also a great organizer, a born leader of men, one of those set apart by natural gifts of physique no less than of mind, to break a trail, to point the way and to hearten those who must engage upon it. His more than half century of service is in itself an accomplishment unequaled and the distance he traveled since those earliest steps taken on the road toward enlightenment and progress, is the whole distance between the practice of a day that remembered the pioneers, to one that was in touch with every latest discovery and application of preventive medicine. He began in a commonwealth in which the scourge of cholera or of yellow fever was a yearly visitation accepted as implicitly as, and with scarcely more protest than, the succession of the seasons. He closed his career in an hour when the mosquito had been outlawed and filth diseases become a disgrace. Against the quack and the empiric he erected all the barriers of boards of registration and all the regulations of a state jealous of the high reputation of its physicians, all the prestige of a record and a character unchallenged. He had tracked the wilderness and charted the unknown to accomplish the impossible and he lived to see that same impossible accepted as a matter of course, of necessity even.

To speak of Dr. McCormack as a veteran, does not, as we have said, bring before us the picture of this valiant spirit, this winning personality, this evergreen of a profession which, by the testimony of his courage as well as of his achievement, prolongs life and makes it, what is more to the purpose, the better worth living. As we call to mind that earlier day we bow the head in reverence for the country doctor who was at once the confidant and the counselor, the residuary legatee of all the troubles, the keeper and depositary of all secrets. Unselfishly and ceaselessly he must give himself to his labor of love, wearing out heart and soul and health with no thought of reward. It may have chanced in that day that frequently he was a man of much experience but little science, one reduced too often to makeshifts and compelled to take chances that seemed desperate. But in that school were bred the McDowells and the Blackburns and, allowing for the difference in years, the elder McCormack. We do not mean, we could not mean, that he lacked science. But pathfinder he was. Was not Pasteur another?

It is a grave loss. Wise in counsel, genial and of a broad and catholic understanding our old friend was of those, and they are few, who leave a real void. But he has done his work and run his race. Surely no man could intone the "Nunce Dimittis" with better right or assurance more serene.

E. A. JONAS, Editor Louisville Herald.

IN MEMORIAM

Joseph Nathaniel McCormack.

1847—1922

Dr. Joseph Nathaniel McCormack was born near Howard's Mill in Nelson County, Kentucky, November 9, 1847. His father, Thomas McCormack was a farmer and merchant. He attended school until he reached the age of twelve, when he quit school in order to help his father and brothers work on the farm. Despite this handicap, he pursued his studies at home, acquired a good knowledge of Latin and mathematics, and read widely in history and literature. He had determined at an early age to study medicine and pursued his studies without a tutor to prepare himself for a medical career. When twenty-three years of age he graduated from the Miami Medical College of Cincinnati. He was the valedictorian of his class, and, after competitive examination, was awarded an interneship in the Cincinnati General Hospital. While a student there, he won the esteem and friendship of Dr. John A. Murphy, the Professor of the Principles and Practice of Medicine in Miami Medical College, an impressive teacher, accomplished practitioner, and a man of high ideals. This friendship was cherished throughout all the coming years. After completing a year's service as interne, he returned to his home in Nelson County, and began the practice of medicine. In 1876, he also received the degree of M. D. from the University of Louisville.

In 1871 he married Miss Corinne Crenshaw, his beloved companion and help-mate throughout all his succeeding years, and who survives him.

As a practitioner of medicine he was resourceful and self-reliant; a diligent student, he supplied himself with the best medical books and journals; and with energy and enthusiasm pressed forward to an advanced position in his profession. He became widely and favorably known as a practitioner in his native county, and while engaged in country practice did some of the most creditable surgery of his career. In 1876 he established himself in Bowling Green as a progressive and successful practitioner. He early evinced a preference for surgery, in which he was especially successful. In 1878 he became widely known in Kentucky on account of his heroic service in the yellow fever epidemic which prevailed in Bowling Green and vicinity at that time.

When the State Board of Health was created by the Legislature, this action resulting mostly from the disastrous prevalence of both cholera and yellow fever in the preceding years, Dr. Luke P. Blackburn, then Governor, appointed Dr. McCormack a member of the Board. About this time, 1879, Dr. McCormack attended the meeting of the Kentucky State Medical Society in Danville. the occasion made memorable by the formal dedication of the McDowell monument erected by the State Medical Society. Professor Samuel D. Gross, the most commanding figure in the medical profession of America, and one of the most eminent surgeons in the world, was the orator of the occasion. Dr. McCormack was deeply interested in all these proceedings, and was so impressed by the personality and erudition of Professor Gross that he never ceased throughout the years to express his great veneration and admiration for "the Nestor of American Surgery." The concluding paragraph of Professor Gross' dedicatory address is as follows:

"Young men of the Kentucky State Medical Society, listen to the voice of one who has grown old in his profession, and who will probably never address you again, as he utters a parting word of advice. The great question of the day is not this operation or that, not ovariotomy or lithotomy or a hip-joint amputation, which have reflected so much glory on Kentucky medicine, but is *Preventive Medicine,* the hygiene of our persons, our dwellings, our streets, in a word, our surroundings, whatever and wherever they may be, whether in city, town hamlet, or country, and the establishment of efficient town and State boards of health, through whose agency we shall be the better able to prevent the origin and fatal effects of what are known as the zymotic diseases, which carry so much woe and sorrow into our families, and which often sweeps, like a hurricane over the earth destroying millions of human lives in an incredibly short time—This is the great problem of the day, the question which you, as representatives of the rising generation of physicians, should urge in season and out of season, on the attention of your fellow-citizens, and which above all and beyond all others, should engage your most serious thoughts and elicit your most earnest activities."

It is not improbable that these words impressed Dr. McCormack so deeply that, with his appointment on the State Board of Health, he determined to devote his life to this most fruitful and then neglected field of work. At this meeting of the State Society in Danville he reported a notable case of gun-shot wound of the intestine, in which he resected the gut and saved his patient.

He was recognized as an able and skillful surgeon, but he gradually became more and more absorbed in the work of the State Board of Health, and when in 1883 he was elected Secretary of the Board he gave his time and labor unremittingly to the executive work of that office. He continued as Executive Officer of the Board until 1912, when he was succeeded by his efficient son, Dr. A. T. McCormack. He maintained, however, until the day of his death an active official connection with the Board, and devoted to its work and welfare his constant thought and devoted labor both by day and night.

It is difficult at the present time, after all the progress made in medicine, and especially in sanitary science, for one to realize the utter disregard of sanitary measures in which the people of Kentucky lived forty years ago, and consequently the colossal task then assumed by the State Board of Health and its executive head. The water supply of all the cities and towns was impure and unfiltered; drainage was either non-existent or notoriously imperfect; typhoid fever, dysentery, diphtheria and other filth diseases prevailed persistently and broke out in epidemic form at frequent intervals. Small-pox, scarlatina and other contagious diseases prevailed without any regulations for quarantine or efficient control. The cities were infested with advertising charlatans and the traveling nostrum-vendors traversed the country, imposing upon the credulity of the people and filching their money.

Dr. McCormack not only prepared the bills of the General Assembly for the prevention and control of disease, and for regulating the practice of medicine, but he personally appeared before the Committees of both Senate and House and secured their enactment into law. And then he assumed the more difficult task of enlightening the people as to the importance of sanitary measures and to enforce the laws against charlatanism.

The appropriation for the Board for many years was ridiculously inadequate, the entire sum at the disposal of the Board being about twenty-five hundred dollars.

From the beginning of his official labors as State Health Officer, Dr. McCormack realized that an organized and united medical profession was essential both for the enactment of sanitary laws and for the co-operation of the intelligent laity in their enforcement. He set about the reorganization of the Kentucky State Medical Society and the establishment of affiliated County Societies throughout the State. Indeed, one of the most important functions of the State Societies is to diffuse knowledge of sanitary laws among the people, and to secure such laws through its Legislative Committee. Dr. McCormack stimulated this function of the Society, and secured in every community the interest of the leading practitioners of medicine in the important work of the State Board of Health. The entire movement was difficult, and from the nature of things complicated, but he persisted in the work with unremitting energy and patience. He was often temporarily defeated, and as often he returned to the attack until success crowned his efforts. He was invincible in combat; he often snatched victory from defeat; and even when overcome for the time, he would promptly renew the attack. He was always even-tempered and fair with the opposition, and could often carry his point despite apparently insuperable obstacles.

He loved work and was ambitious to serve in his great undertaking. Some could not appreciate his altruism, and naturally attributed to him selfish motives. Hence, he was often misunderstood, but by those who knew his devotion to a great purpose he was loyally supported. If the reader will scan the pages of this JOURNAL he will witness the high esteem and affection in which he was held by the medical profession of his native State and the Nation, as well as by the people who received the benefit of his long public service.

Two years ago at the suggestion of a member of the State Medical Society of Kentucky, a fund was gathered by voluntary contribution to present him in the name of the Society a portrait of himself, which now is placed in the office of the State Board of Health in Louisville. He was elected president of the State Medical Society in 1881, and received many expressions of confidence and esteem from the profession from year to year. He had a national reputation and rendered conspicious service in the American Medical Association.

Dr. McCormack was a many-sided man, and the limitations of this article will not admit even an outline of his distinguished characteristics. He was a generous neighbor, a loyal friend, and a most interesting and congenial companion. His tastes were simple, and his habits temperate and frugal. He was by nature a refined man, and had no relish for vulgarity in any form. He possessed wonderful adaptability, and could adjust himself to any environment, whether it be that of the peasant or the prince. He had a retentive and incisive mind, which was stowed with useful knowledge. His reading was not confined to medical literature, but until his last days he read much of classical literature and his knowledge was accurate

and thorough. He made two trips to Europe, traveled in every part of his own country, and exercised a broad view of life and events. He appeared perhaps at his best in the family circles of his own home. His hospitality was of the most generous sort, free from ostentation, spontaneous and wholehearted. His face beamed with affection, and the pleasure he had in the happiness of his loved ones was apparent in every word and gesture.

He lived to see the fruition of his hopes and the triumph of his years of arduous labor. From the humble beginning, almost without means and homeless, he lived to see the Board of Health established in its own home in Louisville, with laboratories and bureaus of its several departments equipped and actively discharging their important functions; with a school for training physicians and nurses for public health work, and with an organized health service in every county in the State. He lived to see his son take rank among the leading sanitarians of the country, to discharge with distinction the responsible service in Panama to which he was assigned during the World War by the Surgeon General of the Army, and now carrying on with zeal and ability the executive work of the Board of Health of Kentucky.

Death came to him in the gentlest way. Leaving his desk at the usual hour in the afternoon, he spent the evening happily with his family, and retired at the usual hour. In the morning he arose and complained of feeling dizzy, and decided to lie down until the feeling would pass away. He fell asleep, the sleep deepened into coma, which continued until the following morning when the end came. He was an advocate of cremation as a sanitary measure, and had directed that his body be cremated. This was done, and the ashes interred beside the graves of his grand-children in the cemetery at Bowling Green.

A distinguished colleague, who knew Dr. McCormack well, when informed of his death, wrote these words: "What a life of triumph! He saw the way to high service and served. He inaugurated a chain of beneficent influences which will go on in widening circles for ages to come."

Is not this to be immortal?

L. S. McMURTRY.

DR. JOSEPH N. McCORMACK, THE GREAT ORGANIZER.

The passing of Dr. Joseph N. McCormack, Louisville, Ky., at the age of 76, is announced. Dr. McCormack was one of the few really great organizers in the medical profession within a generation.

He organized the Kentucky state board of health and was its executive secretary for thirty years. He was the chairman of the committee on reorganization of the A. M. A. from 1900 to 1910 and it was largely due to his foresight and energy that reorganization on the present basis became a reality.

Members of the Nebraska state medical association fifteen years ago will remember that Dr. McCormack spoke at a dozen places in this state and did a great deal to bring the profession together.

It was the privilege of the editor, then president of the association, to travel with Dr. McCormack two days and to learn to fully appreciate his worth.

One of his outstanding doctrines was that if there were in a county a physician ethically and morally somewhat "off-color," the county society should not for that reason refuse him membership; but should receive him as a member and at the next opportunity elect him president of the society thus placing him on his honor to do right. —*The Nebraska State Medical Journal.*

PASSING OF A HEALTH PIONEER.

Dr. J. N. McCormack Dies in the Harness.

The pioneers in any great movement are usually strong men, naturally fitted by physical and mental endowment to be leaders of the people. In the recent death of Dr. Joseph N. McCormack of Kentucky, this country has lost one of its great pioneers in public health work. Born in Nelson County, Kentucky, in 1847, Dr. McCormack graduated from Miami Medical College, Cincinnati, in 1870 and began the practice of medicine in his home county the same year. In 1879, Kentucky created a state board of health. Dr. McCormack was a member of the first board and from 1883 to 1913 was the secretary and executive officer of the board. The thirty years of his service cover the vital part of public health development in this country. Besides developing a great health department in his own state, Dr. McCormack found time to serve as a member of the International Quarantine Commission in 1892; as the Chairman of the Committee on Organization of the American Medical Association from 1899 to 1913; and to participate actively as a member of many scientific and

public health organizations throughout the country. He probably had the largest personal acquaintance among physicians and was the most generally beloved of any member of the medical profession in the country. His death leaves a gap that cannot be filled. —*Health.*

DR McCORMACK.

For more than half a century Joseph Nathaniel McCormack has been a potent factor in Kentucky, and during those years rendered invaluable services; of rare personal charm, indomitable will, incisive intellect, persistent purpose, from the day he entered upon the practice of his profession Doctor McCormack has been a marked figure in the medical and political life of Kentucky.

He would have achieved success in any field because of his qualities of leadership. In his chosen field of medicine he combined the zeal to heal with the greater zeal to prevent the ravages of diseases from which the people suffer.

He recognized the need for political power to accomplish his purpose for the good of the state and used with consummate skill the art of the politician, combined with the skill of the physician.

It is impossible to estimate how great were his services. It is impossible to overstate the effect of his long devotion to the cause of public health. At times it seemed that the result was not commensurate with the need, or the effort put forth by him and those who urged him with indomitable courage and never failing hope the war against disease.

And today forgetting all differences as to policy or divergence of view as to relative needs, The Herald makes grateful acknowledgement of the debt of obligation Kentucky owes to him.—*Lexington Herald.*

THE PASSING OF KENTUCKY'S FORMER HEALTH OFFICER.

Illinois physicians and laity alike, especially those engaged in public health service, take occasion to join Kentucky and the rest of the country in mourning the loss of that distinguished physician and public servant, Dr. Joseph N. McCormack, whose death occurred at his home in Louisville on May 4.

He was among the first in this country to enter the field of public health in an official capacity. While others quietly brought to light the many fundamentals and far-reaching discoveries that have so splendidly influenced the trend of preventive medicine and public health administration during the past fifty years Dr. McCormack, through his rare faculty and leadership and because of his clear vision into the future, carried these great principles into practical use and brought to his people an everlasting benefit in the shape of longer and healthier years.

The medical legislation in Kentuccky, the public health policies in that state and the administration of both, can fairly be said to have centered in Dr. McCormack for more than a quarter of a century. His unusual strength as an organizer was felt by the medical profession throughout the entire country. Not only did he play an important roll in the creation of many state societies and the development of the national association of his chosen profession, but the Conference of State and Provincial Health Officers was the work of his hands.

These and many other monumental achievements make us hasten to pay him a well earned tribute and to express our feeling of deep appreciation for a life so remarkably filled with unselfish and perpetual usefulness.—

A SCIENTIST MILITANT.

Last rites at Bowling Green for Dr. Joseph Nathaniel McCormack, who died in Louisville, were marked by the sorrow of a multitude in the old "home town" of the famous exponent of advanced medicine.

Dr. McCormack was a scientist militant.

He was not content to practice medicine merely. He wished to convert men and women to improved hygiene and sanitation; to preventive medicine and scorn of quackery as a great evangelist wishes to convert men and women to the Christian religion; to teach them salvation and persuade them not to consider false gods or false ideas of this life and its responsibilities, and the life to come, and its possibilities.

Dr. McCormack's ashes are returned to the soil of Southern Kentucky; to Bowling Green, an educational center which has been the birthplace of many useful citizens of Kentucky, none of whom has been more useful in his generation than was Dr. McCormack.

Kentucky's grief is not without the solace of pride.—*State Journal, Frankfort.*

DR. J. N. McCORMACK.

As we go to press it is reported that Dr. J. N. McCormack, long time Secretary State Board of Health was in a precarious con-

dition expected to die from hemorrhage of the brain producing paralysis. Dr. McCormack was our friend for years, a kindly gentle, true hearted, generous man. He was the best known health expert in the United States and has organized more health organizations in more states than any other man living or dead. We trust that he may not pass into the great beyond at this time, but if he does his friends will know that he carries with him everything that will cause the Great Creator to say "Well done good and faithful servant, enter thou into the joy of eternal rest."—*Jessamine Journal.*

DR. J. N. McCORMACK.

Dr. J. N. McCormack's busy and highly useful life has come to a peaceful end. He was a very remarkable man. He filled a place in the affairs of Kentucky and America of great significance. His accomplishments in elevating the medical profession and the standards of health would not only fill a book, but many of them. His energy was boundless, his vision extraordinary, and he had executive capacity that is given to few men. The people of Kentucky among whom his good works are so well known should honor his memory by erecting a notable monument to him.—*The Owensboro Messenger.*

DEATH OF DR. J. N. McCORMACK, OPTOMETRY'S ADVOCATE AND FRIEND.

News of the death of Dr. J. N. McCormack, of the Kentucky State Board of Health, reached the Journal Thursday, May 4, when the following telegram was received from Thomas M. Howe, Louisville:

"Dr. J. N. McCormack, for many years past one of the outstanding figures of organized medicine and for the past two years one of optometry's best friends, died suddenly in Louisville, Thursday."

Dr. Joseph Nathaniel McCormack, for 43 years actively associated with the Kentucky State Board of Health and one of the most widely-known physicians in the United States, died at his home, 1416 S. Third St., Louisville, at 7:00 A. M., Thursday, May 4. Death was due to paralysis caused by cerebral hemorrhages.

Funeral services were held Friday morning at the residence. The Rev. Harris Mallinckrodt, rector of the Calvary Episcopal Church, conducted the services.

The active pallbearers included the departmental heads of the State Board of Health. The honorary pallbearers came from all parts of the State. Immediately after the religious services, the body was taken to Cincinnati for cremation. The ashes are to be buried at Bowling Green, where Dr. McCormack formerly lived.

Dr. McCormack was appointed a member of the State Board of Health in 1879. In 1883, he was elected secretary of the board, in which capacity he served until 1912, when he was succeeded by his son, Dr. A. T. McCormack. Since 1883, Dr. McCormack had written all the laws on the Kentucky statute books and many in other States dealing with public health, the practice of medicine and medical education. In 1881, he was elected president of the State medical association. He was chairman of the committee on organization of the Americal Medical Association from 1898 to 1910. He visited every State medical association in the country organized at that time, rewrote their constitutions and by-laws and addressed the legislatures of more than two-thirds of the States.

For the last ten years he has been actively associated with his son, Dr. Arthur McCormack, in the work of the State Board of Health. For the last few years he had served as director of the Bureau of Sanitation.

Dr. McCormack was the most active opponent of the Kentucky optometrists' fight for a State law until 1920. Since then, he has proved to be one of optometry's warmest friends. Thomas M. Howe, Louisville, who perhaps knew Dr. McCormack better than any other optometrist, pays the following tribute to him:

"For twelve years, Dr. J. N. McCormack and T. J. Howe were the opposing leaders in the fight for an optometry law in Kentucky, neither side being able to enact its bill until the compromise of 1920 was effected.

"Since then Dr. J. N. McCormack had shown a wonderful broadmindness and had developed a decided respect for optometry, evidenced on many occasions by a most far-seeing liberality.

"Optometrists the country over will remember the cordiality with which he endorsed the tribute to optometry delivered by his son, Dr. Arthur McCormack, secretary of the Kentucky State Board of Health, a couple of months ago.

"In his death, optometry loses one of its most powerful advocates—an able ally—recruited from an unexpected source—and optometrists the country over have cause for sorrow in the passing of this grand old man, who was their opponent but became their friend."—*The Optical Journal and Review.*

AN INTIMATE SKETCH OF DR. J. N. McCORMACK, BY ONE WHO KNEW HIM AND LOVED HIM.

There is possibly no one living in Nelson county, Kentucky, today who could give an account of the strenuous, adventurous life Joseph McCormack led in the years while he was growing to manhood on his father's farm, lying among the rugged hills, beautiful at all times, and the river bottoms of the Rolling Fork of Salt river. This stream, wending its way so peacefully through the summer, became, at other seasons, a raging, roaring torrent, noted for its rapid current. Many people attempting to cross it lost their lives.

Often when the family sat of evenings around the great stone fire place, where the back logs burned, and sang the song of their dripping juices, all were entertained by accounts of the times when, plunging into the swollen flood, to go to the county seat at Bardstown, at midnight to Hodgenville for the doctor, or to New Haven for freight, whatever was needed to be done on that farm was done, when weaker wills would have considered it impossible.

Breaking young horses and mules to bit and bridle were as much sport to Joseph McCormack and his brothers as foot and base ball are to the youth of today. Driving ox teams taught him patience with the utmost human obstinacy and stupidity.

Book keeping from early youth in his father's country store taught him business habits, and the value of accurate accounting, the value of the right use of time, and the importance of keeping engagements when made.

Thirteen years of age when the civil war began, guerillas, time and again, rode up to the house and demanded food, and one night a band of them raided the store, and carried off all they could. After this, three handy rifles were laid in sight and easy reach; the thieves took warning, and, after being fed, went on their way. Two older brothers being in the southern army, the sense of protection for mother, sister, and an elderly father, developed self-reliance, self-respect, and all the traits that go to make up the high minded man he was.

When grown he was six feet high, broad shouldered, full chested.

In early life slight in weight, a supple, agile figure, as he grew older he took on size and weight. He had erect carriage, and to the last day he was out, there was a vigor and spring in his movements rarely seen in men of his age. Reared in frugal habits and simple tastes he carried these characteristics through life. He was always attired in clothes of good durable material, generally fitted by a good tailor, nearly always following the same pattern. He had no taste for novelties in dress, always wearing the same style of collar and cravat. His clothes sometimes bore the mark of age, but the skin beneath them glowed with ruddy health and cleanliness. Perhaps his greatest physical gift was his voice. Power went out of it that gave confidence to the sick, comforted the sobbing child, and convinced his audiences of his honest purpose, and high ideals. Even his horses knew and were easily controlled by a word from him. Whilst practicing medicine in Warren County late one evening in a cold and biting wind he was halted by the notice: "Condemned. Do not try to cross." He must cross; all at home would be expecting him at any moment; he must not disappoint them. He was riding a high spirited horse that he loved, but, dismounting and fastening the bridle securely about the saddle, he turned the horse loose and told him to go. Having reached the other side safely, at the word, he stood waiting until his master walked carefully across. Reaching home nothing was said of this adventure, until a messenger coming in for him the next morning said the Drakes Creek bridge had fallen during the night! It was replaced by an iron bridge that is now on one of the wildest, most beautiful drives near Bowling Green. Driving a high bred racer to the depot to catch the train for a departing guest, the latter said, when the engine rushed up in all its mechanical terror. I'd think so spirited a horse would run away at this sight. "Why, no, Roy thinks that engine is afraid of him." All the years of his early practice of medicine and surgery in Nelson and Warren Counties were done on horse back, with his medicine case, and instruments swung over his saddle.

The accounts of his experiences in the practice of medicine and surgery would fill a good sized volume. Reaching a home where an accident necessitated immediate relief, crowds of sympathetic neighbors, often made it necessary to improvise a bed under the branching limbs of the roof tree, where the sufferer could have breathing room. He attributed much of his surgical success to these out door clinics.

Sometimes his surgery was attended with military demonstrations when relatives, alarmed at the sight of surgical instruments, threatened the life of the operator. At times it was necessary to quickly form a guard for protection till the patient was relieved.

Whilst practicing medicine in Bowling Green, he announced to his patrons he was going to Europe to look into the hospitals,

learn all the latest medicine he could, and he would give them all time to get well while he was gone. No one had more loyal friends than he had.

He bore letters of introduction from Drs. David Yandell of Louisville, and Marion Sims of New York. They were an open sesame to the doctors in Edinburgh and London who gave him every facility to see the best they had to show in their profession, besides giving him delightful social attention, that he spoke of with pleasure as long as he lived.

Dr. McCormack, always careful of his own expenses was most generous in his home. Hospitable, patient, forbearing over the small vexations incident to all family life, his was a judical mind. A young nephew, for a time a member of the family, said to him: "Uncle is the justest man I ever saw." He was never too busy to sift out and adjust differences that arose between the boys who dwelt under his roof with his only son; no favors were shown; all stood the same chance before this just judge. He was as easily approached by a servant, a laborer, a child, as by the finest citizen. Class distinction never bothered him. He loved men. Abou Ben Adam, by Leigh Hunt, was a favorite that he often repeated.

He engaged in the general practice of medicine while he lived in Bowling Green. The second trip to Europe was made when he and his wife were sixty years old, in the summer of 1907. It was in fulfillment of a promise he had made when he asked her to marry him. He never failed to keep a promise, although this one had to wait for thirty-seven years.

The writer of this sketch begs pardon for an account that bears on his wishes as to the disposal of his body after the soul left it.

The day we reached London we went to the heart of the city, Trafalger Square. After viewing the noble monument in the center of the square we walked about it, until, weary, we sought seats in the church yard of St. Martin's-in-the-Field, at one corner of this busiest square in the world. How quaint and English to still call this place "In the Fields." The time when a field was there harked back to long, long ago. We noticed the stone walkway in the yard had carved inscription: "To The Memory" of this one and that. A care-taker came up to us and I asked, "What does this memorial walk mean?" "Well, lady, this yard became so crowded, it had long since ceased to be used as a burial place, so the authoritries had the bones that had lain here so long there were none left to feel an interest in them, disinterred and stored in the basement under the church, and the headstones laid for this walkway."

When we reached Bristol, going to Temple Church, built by the crusaders of St. John, where one of my ancestors had been a vestryman, and had left twenty pounds annually, in perpetuity, and where I hoped to find some traces of family history; here, as we walked in the church yard, while we waited for the doors of the church to be opened, we found the same sort of walkways we had seen at St. Martin's. As I walked and read, I feared I might find what I sought here under my feet. A thrill of gratification ran through me however, when I beheld the memorial to the memory of those who had served there, was carved on a tablet let into the walls of the church.

In Rome we were taken down to the catacomb under the church of the Capucins. Here we beheld a mosaic floor laid with human bones, in geometrical figures, the ceiling frescoed with bones, archways with the articulated skeletons of monks suspended, wearing the brown cowl and robes of the order to which they belonged. In front of them hung baskets holding flowers, and vines made of small human bones. We were told that when the burial places became full, the bodies of the monks were disinterred to make room for others, and living monks had occupied themselves in turning these old bones to these uses. What! The church that has the most elaborate ceremonial for the burial of the dead? He said, "The creed we have been repeating all our lives needs to be modified: We believe in the resurrection of the body, but certainly not *this* body." After this whenever this subject was mentioned, Dr. McCormack maintained cremation was the proper disposition of the body when the soul left it. The time would come when this would be the belief of the world from a sanitary view.

His ashes lie beside his grandchildren.

DR. J. N. McCORMACK IN HIS RELATION TO THE MEDICAL PROFESSION.*

By D. M. Griffith, Owensboro

I would that someone more capable had been elected for this, but your committee requested me and I felt to decline would be false to one of whom I never think, without a thrill of pride, in his friendship that I was privileged to enjoy.

It is an old and honorable custom handed down to us from ancient times to select from our number someone who has most furthered the cause or achieved distinction in some particular field of activity, to place upon his brow the laurel wreath of our admiration and affection. This my friends is the Knighthood of medicine. Some countries bestow all medical honors during life, but we in America place the Crown of Glory after death.

We are assembled today to pay affectionate homage to the memory of as valiant a Knight as ever wielded a scepter in the cause of our Merciful Calling, and to place his name among the first on the roll of medical chivalry.

When that great pilot, Dr. J. N. McCormack, took hold of the steering wheel of the Health Board of Kentucky, medical affairs were in a chaotic condition. Legal restrictions were nil, medical education, except in ambitious individuals, was at a low ebb; the quack and the charlatan flourished unrestrained in every county seat, and the unsuspecting sick public was picked of every financial pin feather; disease wrought havoc in endemic and epidemic forms, and medicine was practiced with no effort at prevention seeking only to relieve or cure.

With an undying determination, a ceaseless energy, a matchless power to persuade and inspire, with a patriotism of a Washington and the diplomacy of a Talleyrand, he bombarded the legislature until it enacted laws that brought help and improvement to the profession and surcease from pestilence to a suffering people. An editor said of him that "Against the quack and empiric he erected all the barriers of boards of registration, and all the regulations of a State jealous of the high reputation of its physicians, all the prestige of a record and a character unchallenged. He had tracked the wilderness and charted the unknown to accomplish the impossible and lived to see that impossible accepted."

It has been said that he wrote all the laws pertaining to health, put upon the statutes of Kentucky, an achievement in itself of monument worthy any man's genius. His aim was not so much to promote medical organization as it was to improve and perfect medical knowledge. Whatever his motive it may truly be said that the immediate and ultimate effect was to promote and improve the health of the people.

His constant creed was human health,
His daily deed to defeat death,
Duty by him was considered wealth
To give to man additional breath.

He was the staff and rod that sustained and supported the profession of Kentucky in its every trial for a period of forty years and wisely counseled the doctors from the Big Sandy to the Purchase. He was in the closest possible contact with the entire profession, from the novice to the veteran. The youngest and most inexperienced could approach him with a feeling of ease and confidence and invariably left with the impression of having met a great man. But it remained for those who knew him intimately, and who saw his wonderful work at close range, to realize how broad the mind and how big the man.

No man in American medicine possessed the great organizing and administrative talent that marked his every move in directing County, State and National Societies. This talent amounted to genius, and when big league medical questions were considered he was called upon for counsel and advice. When disaster threatened the American Medical, He was the Moses who led them out of the wilderness.

He approached the problems of reorganization in no haphazard way, but with the clear and concise vision of a Master of that art possessed of all the details of a perfect conception. That the principle of his plan was large and logical is evidenced by the effective American Medical and numerous other societies in whose reorganization he personally assisted.

The profession greatly profited by his talent and intellect. He was not only a great leader but a great executive. In duty and in disaster he preserved his mental poise, and was superior to inefficiency and incompetence. His watchful care over the medical profession and the medical men of Kentucky was most fatherly in its tenderness and solicitude.

He did more to cement, solidify and to save the profession from its own evils than any man in American medicine. He made the profession understand that health as well as disease was its great problem, the public to realize that the medical profession was its greatest protection and he taught the people that doctors were unselfish as well as scientific. His work was the finest inspira-

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tional influence that was exerted upon the profession, it guided and directed the young in their professional progress, and led and lifted the erring old into the way of righteous practice.

It has been tersely said "That in every community where he spoke it was an honor to be a physician, a pleasure to practice medicine and the public was benefited even more than the profession. A great eastern editor said, "He was the greatest exponent of the gospel of good health that this country ever produced."

Few men lived as he did, to see the fruitage of his labor harvested in his own season. His unparalleled life of forty years of continuous public service; bringing satisfaction to his every aim, fulfillment to his every hope, happiness to his home and blessings untold to his State made his life a perfect fulfillment of the Poets dream.

"May the love of your children embrace you,
And the love of your friends enrich you,
And the success of your work inspire you
Till the crown of your years be complete."

He was an Optimist and so eager to help his profession that he was in his work, body and soul. He was a veritable dynamo of energy and plowed his furrow through every obstruction encountered in the tumult and turmoil of a strenuous life. With him every day was a "Perfect Day" that brought him health and work and the pleasure of looking forward to more years of blessed work.

He was as loyal a friend as he was wise as an adviser and was unequaled as a host. To his profession he was a pioneer and a prophet; to his friends a companion and a counselor; to the sick public a servant and a savior. Genial, gentle and great he measured true to all the standards of a mighty man, and I know of no one so deserving this tribute. I pay his memory, in the words of another great Kentuckian. "To have known him was an education in primal manhood. To have associated with him was a precept of priceless value, to sit with him at his hospitable board was an inspiration in the genius of life and the art of living."

He had a most remarkable gift of inspiring confidence, and few men had the personal following and none the professional following that he enjoyed. His knowledge of men and their motives was most remarkable, and it was by that knowledge combined with his experience and phenomical power of perception that he saw so clearly the duties of today and foresaw the problems of tomorrow.

He was of the stuff of which explorers are made and like all crusaders he was the object of constant criticism. But in his relation to the profession of Kentucky one fact stands out with striking and unmistakable clearness, and that fact is, no one ever questioned his intelligence or his ability to fill any office he held.

This great man who gave the best of his life, to a labor of love, for the profession of Kentucky, received in part a return of treachery, and the most merciless, malignant and unjust criticism that human tongue could speak, and yet, with an eye single to the good of the cause, he pursued the even tenor of his way with a complacency that marked him as the greatest medical leader of his day. But think not that he stood the scoff and the scorn of the petty and paltry by desire. When medicine was not at stake and man alone measure, he could cut with a rapier keener than a Damascus blade. He could condense into one sentence all the invective of a volume, and though his criticisms were as vitriolic as the caustic satire of Moliere, they lacked the bitterness and left not the sting of the brilliant Frenchman.

His character was assailed, but his personal and professional escutcheon remained untarnished. With him professional pride and progress were always transcendently preferable to personal profit, and his every act brought dignity and distinction to the cause.

His aspirations were for the uplift of the profession. He battled for all those high ideals, for which the pioneers of our profession sacrificed their energy and oft times their lives. And if by their deeds and valor the great are to be measured, medicine will find that, in him, no cause had a nobler champion or a bolder defender, and his life work proved him "A man tried in many high offices and found faithful in all.

As a leader and as an official he left the profession, the Commonwealth of Kentucky and his family deeply in his debt. To the profession he left a work well done, to the people a heritage of health beyond value and to his successful son and family that priceless legacy—a pure life, a noble career and an honorable name.

The friendly feeling and affection the profession of Kentucky had for Dr. McCormack cannot be measured or comprehended, and the words of this memorial will but feebly express the reverence and gratitude that is in the heart of the doctors of Kentucky who know they can build but one monument to his liking, and that monument is, a better and broader profession.

He gave his energy and his all to his calling, firm in the belief that knowledge was superior to empiricism, that science

could relieve suffering, that the laboratory could lengthen life and he died with the finest and noblest faith in his profession.

Those who knew him intimately will have many golden memories to recall, and his influence will live, in our lives, to inspire us and rebuke us lest we forget.

I believe that Stevenson had Dr. McCormack and his kind in mind when he said: "There are men and classes of men that stand above the common herd: the soldier, the sailor, and the shepherd not infrequently; the artist rarely; rarer still, the elergyman; the physician almost as a rule. He is the flower of our civilization; and when that stage of man is done with, and only remembered to be marveled at in history, he will be thought to have shared a little as any in the defects of the period, and most notably exhibited the virtues of the race."

DR. J. N. McCORMACK IN HIS RELATION TO THE GENERAL PUBLIC.*

Hon. J. C. W. Beckham, Louisville.

Permit me to thank you, gentlemen of the State Medical Association, for the opportunity you give me upon this occasion, to pay a tribute to the memory of the man in whose honor this solemn meeting is held. For nearly thirty years it was my good fortune and pleasure to know him intimately, to observe the admirable services he rendered to his State and County, and at times to cooperate with him in the work in which he was engaged. In those years of close association with him, I learned what purposes actuated him, what inspiration guided him, and what courage strengthened him in the ceaseless, indefatigable and unselfish labors he devoted to the public welfare.

So when I come to speak of him, I am influenced both by admiration and affection—admiration for those exceptional talents that he gave and consecrated to the amelioration of the sufferings and afflictions of his fellowmen, and affection for those genial and lovable traits of mind and heart that endeared him to all who came within the range of their charm and irresistible appeal. But he does not need the affection of a friend to testify to the value of his services to his State and to his country. He stands as a conspicuous leader of his generation in making this country a healthier and better place to live in.

Born in the lower part of Nelson County only a few miles from the birthplace of Abraham Lincoln, with many of the same qualities and characteristics of the Great Emancipator, he spent his life fighting the slavery in which disease and pestilence held both white and black. In early manhood he found that in his chosen profession there was a vast opportunity for incalculable service to humanity. A community practice of medicine, however, successful and benign, was too narrow in its limitations for one of his spirit and purpose; he saw a broader field for service; he was more interested in the work of keeping people well and healthy than in treating them after they became sick; and he dreamed of the time when medical science might banish from the earth all sickness and disease, and the need of physicians would be reduced to a minimum.

And let me pause here to speak a word in praise and honor to that large number of your profession who are so unselfishly and heroically giving their time and services to the general cause of public health, in the work of improved sanitation, and in all the agencies engaged in the effort to eradicate the seeds and germs of disease. Be not discouraged if the unselfishness and value of your services do not seem to be appreciated; for intelligent people believe that next to the ministry, a majority of the medical profession are doing the most disinterested and helpful work for the improvement and betterment of human conditions.

He, to whose character and life work we pay homage today, never faltered in that work. Delays and defeats only stirred him to renewed and greater activity. Opposition and hostility whetted his enthusiasm. Blind ignorance invoked increased display of his dynamic energy. Apparently insurmountable obstacles melted away before his amiable persistence and incomparable strategy. His task was most difficult. He had to contend against ages-old prejudices and uncompromising ignorance.

It is the history of all great reforms that their leaders have their chief difficulty in overcoming the prejudices and ignorance of those who are to be the principal beneficiaries of the reforms. This has been particularly true in dealing with health problems, in the improvement of sanitary and hygienic conditions, and in enforcing those regulations and restrictions essential to the public health. Unfortunately we still have much of this opposition to meet. Within the last month, the State Board of Health has had to defend in the courts the right to compel vaccination in the public schools in one of the cities of the State, to protect the children and citizens against a possible outbreak of smallpox.

But there has been much progress in this

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respect. The people have been learning that public health laws and regulations are not adopted for the benefit of doctors, but for their own benefit and safety. Our State Board of Health and its local agencies have been doing a praiseworthy service in educating the people to a proper conception and understanding of this work, and we find in many places in the State an awakened and intelligent interest in it. All possible encouragement and aid should be given to it by the State, the medical profession and by all the people. The future offers to it the amplest and most favorable opportunities for further and far-reaching services in the promotion of the public health.

We have reason to hope that the next fifty years will bring as great development in medical science and in the solution of health problems as the last fifty years. It is marvelous to look back and contemplate what has been done in the passing generation, within the life time of us who are here today. We have seen the greatest scourges that have afflicted the race, like smallpox, typhoid, and malarial fever, yellow fever, diphtheria and others, brought under control by scientific and preventative measures. Kentucky has worthily done its part and kept abreast with this great forward movement.

And we may say, without disparagment to his many able associates and coadjutors, that Dr. Joseph N. McCormack was the unquestioned leader in our State and one of the foremost crusaders of the Nation in the war against disease. His services are universally recognized as of inestimable value to the cause. He reflected credit upon his profession and honor upon his State. In my opinion there are today countless thousands of people in Kentucky alone living and enjoying life and health, who would now be under the sod if it had not been for the tireless and intelligent labors of Dr. McCormack. The work that he so well directed and guided lengthened by many years the average span of life of our people. More than forty years ago he took hold of our State Board of Health and devoted his time and services in building it up to a position where it has become an instrumentality of the utmost good and invaluable aid to the public health.

When he began his work as a young man, the State Board of Health was an ineffective and helpless organization, without power to do any good and practically without money to do it even if it had had the power. But he breathed life and inspiration into it. The State at that time was overrun with quacks and charlatans. We can well remember those days when they gathered their harvests of shekels from credulous and deluded victims. You will recall the itinerant vendor of nostrums and panaceas, on a county court day, in his spring wagon, with his banjo orchestra captivating his multitude of listeners with his plausible arguments for the virtues of his remedies, and easily the most popular and prosperous attraction of the day. He seemed to be competing with and taking the business from the regular and qualified physicians of the community; but as a matter of fact he usually left them a greater amount of work to do, in treating and curing the victims of his noxious drugs.

In those days there prevailed the mistaken conception of personal liberty and individual rights, that any man should have the privilege of practicing medicine or selling drugs without interference from law or regulation. The laws of the State at that time afforded practically no protection to the people against the ignorant peddler or quack. It was under such conditions, which I have only partially described, that the young doctor of Bowling Green began his work; and if we look back at what has been done since then, we can appreciate what a monument that work is to his untiring genius and to his devotion to the service of the people. He set about his work with industry, tact and courage. He had a fine legal mind; and it's imprint is seen in those excellent statutes which he induced the law makers from time to time to enact. Under his guidance Kentucky in the course of years secured one of the best systems of medical and health laws to be found anywhere in the country, and our system became the model followed by other states in dealing with those questions.

Prejudice and ignorance gradually yielded before his unanswerable arguments, and his matchless logic. He had a wonderful influence over men. He was tactful, persuasive, fair and frank in all of his dealings with them. He never lost his temper even under the most provocative circumstances, and his patience was inexhaustible. He was always generous and courteous to those who opposed him and his plans. He was ready to concede any merit in the argument of the other side. In dealing with new schools of medicine or healing he was ever willing to accord them just treatment, only insisting that the public be protected from any imposition or fraud. While always loyal to his profession, and deeply interested in its progress and welfare, his first concern was for the health and lives of the people. Whenever there was an outbreak of disease or epidemic anywhere in the State, even the remotest points, he immediately left by the first train or vehicle, for the scene of trouble and danger, and directed the local authorities in the use of the most successful methods

in combating the epidemic. No consideration of his personal comfort, no thought or care of his own health or life, ever deterred him for an instant in rushing to the rescue of any community so threatened or afflicted.

I know of no man of his generation who accomplished more real good for the people of Kentucky than Dr. McCormack did in his nearly one-half century of service. He was one of those rare men who had both the heart and the will to serve his fellowmen. He never became discouraged nor quit the fight even when those whom he was endeavoring to serve seemed to resent his efforts or to block his way. We need more men like him in other lines of human progress. We have plenty of men with the best of intentions, with excellent ideas of what should be done to improve conditions, but who have not the energy or the spirit of sacrificing their own ease and comfort to push their intentions and ideas into fulfillment.

The best of ideas are of no avail if they are not crystalized into practical operation. They live and die in the mind of the dreamer like a flower in the desert, of no use to society. Too many good men become disheartened and abandon the struggle when they meet the obstacles in the way of any genuine reform or advancement. But in the lexicon of Dr. McCormack's life there was no such word as "quit."

His studies and accomplishments were not confined to the science and work of his own profession. For a man of his busy and active life it was remarkable how much general reading he did. He was familiar with the best works of our literature, and found great pleasure and recreation in his large and well selected library. He was cultured and refined in his tastes. He took a deep interest in public questions and in the government of the State and Nation. Few politicians are as well informed as he was upon the political and economic history of the country, or upon the characters and deeds of our public men. He was intensely interested in the cause of education, and one of his principal hobbies was his desire to see the Jeffersonian idea of education from the grammar school to the university put into actual practice. He delighted in discussing these questions with his friends and he was always entertaining and instructive.

But I must not take up more of your time in recounting the virtues and achievements of this great and good man, whose friendship I so highly prized, and whose services to his State have placed me and all other Kentuckians under lasting obligation to him.

It is fitting, therefore, gentlemen of the State Medical Association, that you should set apart this occasion to do honor to his memory. His life and works have become a part of our history, and they should inspire us with renewed purpose and energy to take up his task where he left it off. We shall miss him very greatly; but his example must be with us always, and we can best honor his memory by imitating as far as possible his unselfish devotion to the service of his fellowmen and the unconquerable spirit with which he did his work.

DR. J. N. McCORMACK AS A MAN.*

By J. A. Stucky, Lexington.

Perhaps never in the history of the Kentucky Medical Society has the heavily draped vacant chair been more conspicuous and caused more anxious questioning than today. Our profession has always been linked closely with that of the Divine, in that the Man of Galilee was called "The Great Physician," and one of his favorite apostles "The Beloved Physician," but notwithstanding this intimate relation of our science and art, we have not been able to answer the question, Why, When or Where the vacant chair will occur.

This State and this society in many respects have an enviable record. Almost simultaneously with one other state, Pennsylvania, was born Transylvania, in Lexington, Kentucky, a school for teaching the science and art of medicine. Kentucky is in the foremost ranks in the history of medicine in the world, and perhaps no more prominent, honored, or beloved men are outstanding figures in the history of the growth and development of medicine than those springing from Transylvania. Daniel Drake, Ephraim McDowell, Ethbert Dudley, Parvin, Yandell, Cowling and others *blazed* the way. Daniel Drake rode on horseback from Lexington to Cincinnati to teach the students there, while Ephrian McDowell and Ethbert Dudley did a work of similar sacrifice, and then after a century of development came in our midst, J. N. McCormack, who from that time until the day of his death has been one of the most prominent figures in medical science of any man in this or other states. In placing his name in the list with the others and honoring his memory as we do theirs, let us note for a moment the great difference in the work of the pioneers and Dr. McCormack's work. The former taught men as we teach them now, how to relieve human suffering and save the lives of others just as the average medical university and hospitals today are doing.

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Dr. McCormack came in a later period in the development of our science and art, and devoted his wonderful brain and personality to teaching the masses to save themselves from disease and death through observanee of and obedience to sanitary law, and in teaching sanitation, hygienie living and the prevention of disease he paved the way the pioneers had blazed, rendering invaluable serviee to the profession and people of his State. He possessed rare personal eharm, indomitable will, incisive intelleet, persistent purpose and would have achieved success in any field because of his qualities of leadership. In his profession he combined the zeal to heal with the greater zeal to prevent the ravages of disease from which people suffer. He organized the need for political power to accomplish his purpose for the good of the State and used with consummate skill the art of the politician with the skill of the physician. It is as impossible to estimate the greatness of his serviee as it is to overstate the effect of his long devotion to the cause of public health, and today forgetting all differences as to policy or divergenee of views as to relative needs, the people and medical profession of Kentucky make grateful acknowledgement of the great obligation Kentuckians owe him.

As a man he gave his best to us that the Kentucky Medical laws should be the best of any State in the Union. To the people he was a friend, teaeher, medical counsellor, and to the medical profession a leader, organizer and ehampion. His personality, leadership and ability not only arrested but wiped out yellow fever, smallpox, typhoid fever and diphtheria. Socially, in his home I have never known a man more cordial, genial and lovable. A great man has gone from us, but though dead his life speaks to the living.

Only a short while before his death, I was in eonsultation with him in his offiee at the State Board of Health building, and he said to me, "Stucky, you and I have been at this game a good while, but I have the advantage of you. While both of us have been in the spotlight on public health matters, you have devoted more time to the mental and spiritual man, while I have hammered away on the physical only. We have both been aiming at the same thing, and while we have not accomplished as much as we would like, much has been done. I would like for you to repeat to me the little verse by one of the old masters, whieh I have often heard you use in your addresses. I admire it very much and want to use it myself on a future occasion."

The verse he wanted is this:

"By mutual confidence and mutual aid,
Great things are done, great discoveries made,
The wise new prudenee from the wise acquire,
And one great hero fans another hero's fire."

It was through the mutual eonfidence and aid of the medieal profession, legislators and the people that the great things he aeeomplished were done and the diseoveries made. He came into contact with the great men in every State in this Union and gained new prudence from their wisdom, as they did from his, and I doubt not that his own heroism has fanned the fire of heroism in many men of other States who are doing the work he taught them to do, teaching the masses to save themselves from disease.

Upon whom shall his mantle fall?

DR. J. N. McCORMACK IN HIS RELATION TO THE AMERICAN MEDICAL ASSOCIATION.*

By Charles A. L. Reed, Cineinnati, Ohio

There is an immortality of man that is known of all men. It is the immortality of for example, Aristotle and consists of the perpetuity of his name, the perpetuity of a knowledge of his personality, the perpetuity of educational influences he set in motion, the perpetuity of our adjustment to laws that he revealed, whieh adjustment comprises largely the measure and substance of our eivilization of today. And there are Archimides, Euelid, Plato, Leonardo da Vinci, Galileo, Newton, Copernicus, Jenner, Franklin, Pasteur and some two hundred others who for that reason are similarly immortal. They, all this galaxy of some two hundred or more, are with us here today in the sense that their intellects are today feeding our intellects; that their discoveries, their revelations, are today influencing our behaviour; and in the sense that their names and personalities are known not only to us but are known and eommemorated by all people of all lands. It is of eourse, not given to all similarly to achieve; similarly to define the cosmos; similarly be law givers to mankind; similarly to reveal the law of the lever, the laws of dimensions, the laws of republies the optical laws of vision, the laws of falling bodies, the law of gravitation, the laws of sidereal

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motion, the laws of immunity to disease, the fundamental laws of electricity, the laws of the germ causation of disease, and the thousands of other so called laws which in the aggregate comprise the Natural Law, a knowledge of which gives to man his primacy in that nature of which he is an integral part. But they who do not thus largely achieve, too, are immortal with an immortality of which we have rational if not a subconscious conception. Has one's name been recorded in history? No. Has his name been passed along by the spoken traditions of his people? No. Does he who bore it lie under a marble shaft with laudatory epitaph? No. How, then, is such an one immortal? He is immortal, here, on this earth, among men, because in that state we call life, he modified the movement of electrons that, in turn, modified the movement of other electrons and so on, until modification was given to eternal motion—and eternal motion is immortal. He, they, we, however humble and unknown, are severally to be estimated in the last accounting by the character and appreciable consequences of the motion induced by each of us. Has it been harmful? Has it been efficient? And in what degree? It is in this spirit and by these criteria that we today approach an appreciation of the life and labors of Joseph Nathaniel McCormack. It has been assigned to a few of us who are of his multitude of friends, each to speak of him and his achievements in some special activity or relationship of his long and useful life. To me has been given the welcome task of discussing those activities in relation to the organized body of the profession that he adorned, honored, loved and served.

The earlier years of Dr. McCormack's membership in the American Medical Association were not characterized by any distinguishing activities within that body. He was busy in those days organizing the medical profession, educating the people and shaping the legislation of his own commonwealth. He was engaged in the execution of wise health statutes that he himself had written. He was enforcing the rules of right living; he was driving the parasitic pretenders in medicine from his State; he was challenging and holding in check at its threshold threatening and elsewhere decimating epidemics; often alone, a veritable Leonidas at Thermopylae, he protected his people, his beloved people, from invading pestilence. It was precisely this service, not only in its material phases, but in its exalted idealism, that gave to him the broad vision, the determined purpose, the dauntless courage with which, now more than twenty years ago, he actively entered the national arena. It fell to my fortunate lot, as president of the American Medical Association, to summon him to this particular service. The character of that service can best be understood by a brief recapitulation of some of the conditions that confronted me on my accession to office.

It may be said with reasonable accuracy that the nominal rather than the real organization of the association at that moment made it only a sort of undifferated nebulas of the profession. It was honeycombed with strife. Personal rivalries, community competition and clique interest so disturbed its councils that its scientific proceedings were regulated to second place. There was no effective recognition of the high social, civic and political functions of the profession considered as a constituent group of the social complex. Political and college intrigues marred if they did not utterly destroy the tranquility of its atmosphere. The forces of cohesion and repulsion were in play against each other under the influence of an instrument called a code of ethics, an instrument that was held sacrosanct by some while execrated by others. Under its inquisitional features, for example, members were subjected to the pains and penalties of excommunication for consulting with those whom the law of the land recognized as physician while held in good standing for thus meeting those whom they knew to be scoundrels but who were in nominal good standing within the fold. In this way it came about that the medical profession of our leading state had been for twenty years cut off from fraternal recognition by the national body. This state of affairs was not only made possible but was being perpetuated by a constitution, which by its own provisions, could never be either lawfully amended or lawfully repealed. Of course such an organization, being unincorporated, with neither a body to kick, a soul to damn, or assets upon which to levy execution, and being therefore irresponsible did not appeal broadly to the profession. Its membership was consequently meager in number, its Journal correspondingly limited in circulation, neither being representative of the profession which thus found itself without means to arrive at either a concensus of opinion or a concert of action. Here, however, we were confronted by a paradox, one, however, that was in no sense singular to that body at that time, but exists in all unorganized or poorly organized groups of human beings. This paradox, wherever found, consists of government apparently by direct action of the people but really with the people directed, lead like

sheep to the shambles, either by some ambitious individual or group of individuals. In this instance both the individual and the clique were in the saddle, a highly centralized, self perpetuating government, that thought for the profession, acted for the profession, assumed to be the profession. The campaign for my election as president was based upon my often repeated declaration that such a regime ought to be overthrown. Upon assuming the duties of president I appointed Dr. McCormack Chairman of a committee on reorganization.

History will never record the labors of that committee, especially the labors of Dr. McCormack, during the ensuing year. I, as ex-officio member of the committee, happen to know of both. The numerous and long journeys; the frequent and prolonged conferences; the careful preparation of tentatives; their patient consideration, frequent amendment and occasional abandonment for others; and so on until the perfected instrument was ready for consideration at St. Paul. There McCormack displayed his always splendid generalship—the generalship of an open field and a fair fight. He met the opposition that was at once interested, strong and entrenched. It was his policy to fight out all differences in committee before the final contest in general session. Every opponent was given a chance to state his objection, but every reason back of each objection was successfully controverted by McCormack. The net result was that one leader of the opposition made the motion to adopt, another seconded it and the whole revolutionary document went through with a whirl; a long and acrimonious controversy was ended; an era of genuine good fellowship was inaugurated.

The constitution reported by McCormack and adopted without change by the association embraced a few cardinal features: (1) The segregation of the legislative and executive functions from the scientific proceedings, (2) the creation of the House of Delegates as a unicameral legislative body, (3) the decentralization of authority by a choice of delegates on a per capita basis by the state association, with (4) all members of state association, which were made an integral parts of the national body; (5) the development of county societies as the ultimate unit of organization under their respective state associaions, with (6) all members of state associations becoming fee paying subscribers to the Journal. It was McCormack's policy, it was the policy of all who were privileged to work with him, the policy of the whole association at the time, first, that every eligible member of the profession should be brought within the fold; second, that, under and by virtue of the constitution, the association as such, through its properly constituted but always controlled agencies, would determine its own personnel, control its own assets and determine its own policies; third, that its JOURNAL, its one revenue earning asset, should be developed primarily for the prompt and wide dissemination of scientific knowledge among the members and secondarily for the no less important function of conserving the social, political and civic interests of the profession; and, fourth, by these means bring the beneficient resources of medical science to bear on the cure of disease, the maintenance of health and the promotion of the welfare and happiness of all the people.

The association, like a ship just off dry dock, its barnacles all gone, with a new and approved chart, started on a fair voyage. McCormack declined to recognize his own task as completed when his report, the constitution, had been adopted. With the enthusiasm characteristic of him, he fairly jumped at the actual task of bringing all eligibles in the United States into the fold through the magic of the spoken word. He personally went from state to state, often county to county, and, with magnetic personality and eloquent appeal, succeeded even beyond his most sanguine expectations. THE JOURNAL at once leaped from considerably under ten thouand to considerably over sixty thousand; now, I believe, to something over eighty-five thousand. Its revenues, derived from your dues and from some independent subscribers but chiefly from its greatly enhanced advertising patronage at greatly advanced rates, made it one of the most valuable properties in the journalistic world. Land was purchased, buildings were erected, rented quarters were abandoned, new and efficient machinery was installed, while healthy surpluses were invested in safe securities. Of such was the magic of organization; of such were the fruits of McCormack's labors.

"Now," we all said, "we at last have a medium of communication through which can be secured a concensus of opinion, a concert of action; a medium through which the cumulative influence of our whole profession can be brought to bear upon the solution of great civic problems; a medium through which the profession as a whole may maintain its just parity of influence and power among the social groups of the Republic."

In the prompt evolution of a policy to these ends, the House of Delegates established a national legislative committee of one

member from each State with an auxiliary member in each county in the United States. A campaign was at once inaugurated for the promotion of the public welfare by securing a better and more influential status for our national health administration through its expansion into a national department of health with representation in the cabinet. The status and influence of our national health services, including those of the army and navy, each powerless through executive order to protect itself, each subjected to inimical and sinister influences, became the object of fostering protection. The army medical reorganization bill that had twice failed of passage was put through. The status of the medical corps of the navy was improved. Representation of the medical corps on the general staff of the army was secured for the first time in history. Larger appropriations and increased public health service were secured. The long pending pure food and drugs bill was enacted into law over legislative opposition and executive apathy. A pivotal fight was waged and won whereby the sanitary administration at Panama was raised from a subordinate to a coordinate status—a service without which, the immortal Gorgas has repeatedly declared, the sanitary administration must have failed and with its failure must have failed the Isthmian enterprise. An educational campaign among the people and in both branches of the congress had resulted in a bill to create a department of public health. The natural enemies of the movement—the one-idea cults, the advertising quacks, the patent medicine vampires with their proprietary interests and with a corruption fund said to amount to millions of dollars, were smoked out and driven into a league of defense. The alignment was perfect; we had them just where we wanted them; we couldn't have moved without getting mixed up. Our whole legislative organization, reaching into every county in the country, was eager for the fray. McCormack was in Washington to lead the fight in person. We had every rational assurance of victory.

It is necessary here to pause long enough to state that, shortly after the inauguration of these two lines of activity, namely, actual organization and actual constructive legislation, the leaders of each turned to the JOURNAL for the expected and needed editorial support. To their amazement nothing came, or, if anything, it was always the form rather than the substance of support which, if anything, was worse than nothing. They, the leaders, became conscious of first, apathy, then passive and finally active opposition at Chicago headquarters. This antagonism finally became insidiously active and perniciously successful, when, at the very moment at which I have arrived in my narrative, standing in long sought-for contact with the enemy, our efficient legislative organization was suddenly swept away. The props were knocked from under the further work of organization. We can readily imagine a derisive shout of triumph from the enemy. The chairman and members of the legislative committee retired in disgust. McCormack, his ship scuttled by its own crew, returned in chagrin to his Kentucky home. Thus ended his active labors in the American Medical Assoeiation.

It is in the light of this humiliating denoncement that we may well inquire a little more closely into its causes, and into the present consequences of these same causes. In other words, on this occasion, we may with peculiar propriety inquire what has become of the McCormack policies within the organization—the policy of democratie participation in its affairs, the policy that every member has the right to entertain and to express his opinion; the policy that every member has the right to communicate with every other member, on all subjects connected with the association, through his own, through their own JOURNAL; the policy of decentralized control as against centralized autocratie and self-perpetuating government; the policy of vigorous and persistent insistance, through and by the JOURNAL, upon the inherent rights and prerogatives of the profession; the policy of promoting every agency and influence of the association promotive of the welfare of the people to which and to whom it stands consecrated. This, my friends, is no small subject, no academic theme. It pertains to the interests of a commercial enterprise worth millions of capital in the market—your enterprise; to the activities of a learned profession of a hundred and fifty thousand members; to the health welfare of a hundred and ten million of people; to the cause of science, of truth and of humanity.

As I have stated, the constitution as it came from McCormack's committee, embraced all these features. But no sooner had it been adopted, no sooner had activities under it been inaugurated, than the always existent interested constitution tinkerer began his operations. He was frequently not openly in evidence personally; his methods were generally insidious, indirect; his purposes were generally well masked and he generally hailed from Chicago. I think that, under his light fingered manipulation no meeting has been held in twenty-one years at which the House of Delegates has not been induced to make some changes in the organic law. And,

as far as my recollection goes, no such change has been made that has not tended to lessen the powers and prerogatives of the delegated body and consequently of the constituency that it represented. This delegated body, the House of Delegates, under the McCormack policies, was created as the effective and only law making body of the organization. It was intended to be and for a time was the representative body of the members who raised the money, created the enterprise and are, even today, the owners, actual owners, of the buildings, equipment, bonds, periodicals, copyrights, franchises and every other asset of the association. Yet this representative body, under the specious manipulations that I have indicated and in disregard of McCormack policies has so far frittered away its rights and prerogatives that it is today powerless to inaugurate a policy and command the support of its own official publication; powerless to create a committee, bureau or council with the assurance that its own action will not be, as it generally is, negatived by its own creatures; powerless not only to appropriate a single cent of its own money for these or any other purpose but even to ask for such an appropriation with the assurance that its humble and prayerful petition will receive even respectful consideration at its own headquarters. Imagine, if you can, the congress of the United States, imagine the legislature of any state, in similar plight. Under this policy of insidious change of powers delegated by the membership to the House of Delegates, in turn have been either delegated to or merely assumed and exercised by its board of trustees. This has gone on unchalleuged until now, it would seem, the trustees no longer deem it necessary to apply to the House of Delegates for such important legislative action as the creation of an office or a bureau or a council. This is shown by the fact that, by their own initiative, they have created the office of general manager and have established something that is called a medicolegal bureau. I may have overlooked the items but I have failed to see in the JOURNAL any announcement of these actions or of the functions of these newly created agencies.

This review now brings me to the next stage in the delegation of authority, the second half of the pleasant game of passing the buck. The trustees, greedy and self-assertive of power, have in many instances failed to exercise after having sought and assumed it. In these instances, I believe, it has been their policy to "leave it to the Editor." This evasion of responsibility has been going on so long until, it would seem they have at last made the thing unanimous by designating the editor as General Manager, not merely of the JOURNAL, but of the entire association. This progressive centralization of power, in complete violation of the McCormack policies in complete disregard and violation of the St. Paul reorganization has of course resulted in a corresponding centralization of responsibility. It cannot be evaded or avoided. The passing of the buck here comes to an end. As a result there has long been visited upon the editorship an increasing amount of criticism which now that that editorship has been merged or expanded into general managership, must and does center about the newly created office. It is to be heard at the national meeting, at the state meetings, at county meetings; it is to be heard wherever two or more medical men get together and speak of the general state of their profession.

There are many counts in the indictment and they seem to be increasing. Thus we hear: "McCormack and progressive organization were abandoned." "The civic interests of the profession were and are disregarded." "The national medical services—health, army, navy—have been left to their fate." "Progressive legislation is not championed." "Agencies such, for example as the Council of Health and Education, authorized by the House of Delegates, have been hampered, negatived and at last arbitarrily defeated at headquarters." "The apathy of the JOURNAL and its office during the war stopped only short of sedition." "The failure of editorial leadership in that crisis failed to make the American Medical Association the recognized agency in co-operation with the Council of National Defense, which, in turn, it failed to support." "The editorial policy of excluding the title of F. A. C. S. and all news items, other than brief and unsatisfactory reports of some National meetings about the organization itself from all mention in the JOURNAL is a personal insult to each of the more than seven thousand members of the American College of Surgeons and consequently inimical to the welfare of the American Medical Association of which they are also members." "The failure of the JOURNAL to oppose with sufficient vigor the enactment of inimical legislation, national and state, has resulted in the passage of bills, e. g. the Shepherd Towner bill, the effect of which has been to sequestrate important functions and perogatives of the medical profession." "There was complete editorial failure either to initiate, recognize, direct, modify or limit the movement for standardization of hospitals." "The failure to give editorial recognition

or support to persons who are making sacrifices in the service of the association are unfair and tend to apathy and inactivity." "The JOURNAL has failed to defend the rights and prerogatives of the medical profession against encroachments by nurses, sanitarians, and others engaged in legitimate but quasi-medical activities." "The JOURNAL excludes practically all matter relating to many of the more important functions of the association while devoting hundreds of pages of each volume to Main Street gossip from thousands of Gopher Prairies." "Under existing editorial policy the association has become chiefly a successful publication enterprise with such concentration upon commercial interests that the other equally important functions of the organization are disregarded, if not entirely destroyed." These and a hundred other criticisms are imposed upon the ear of even the inattentive listener. Of course, strictly impersonal as this review has been and is intended to be, the fact cannot be ignored that these criticisms center upon the present incumbent of the editorial chair, the present occupant of the general managership, the one man in possession of centralized authority and therefore held to correspondingly centralized responsibility.

It is not for me here either to affirm or deny the correctness of charges of which I have given but a partial recapitulation. It is, however, my purpose here and now to defend the present incumbent for exclusive responsibility under any or all of them, whether true or false. I have known him since the day he first entered the editorial office. It was more than twenty years ago. I was one of the trustees. The editorship was vacant. The demand was for an all-time man, who, in addition to being a physician with journalistic experience was also a printer and publisher. We selected the man who, as the secretary of his state association, was the editor of typographically the cleanest state medical journal in the country, and who, earlier in life had had experience in printing and publication. Now, after twenty or more years there is the JOURNAL, look at it! Easily, in many regards, the leading medical journal of the world! And look at the other journals, all neat, clean, high-class; all published under the direction of this same man but each under separate and able editorial management. Yes the man that day installed as the head of the JOURNAL of the American Medical Association has developed into the greatest publisher of medical journals in the world. The monument he has already erected for himself, is not merely the forty odd volumes of a great periodical but the strong financial foundation of the association that he has served not only with an ability but with an unstinted sacrifice of self rarely equaled in the history of co-operative and philanthropic enterprise.

But what else has happened? The House of Delegates meeting but once a year and then in competition with scientific interests, held absurdly short sessions, to transact an absurdly large amount of business which was considered if at all only in committee, then rubber stamped in the general meeting, after which the delegates rushed off for the sections, gleefully shouting, "We're through, we're through!" Then the trustees met absurdly seldom to transact an absurdly large amount of business absurdly arranged with great adroitness at headquarters. They then as now succeed in giving some attention only to publication affairs, all very important; all other affairs were and are given second consideration if any at all; the members are in practice, patients are waiting at home; trains are about to leave; time is up:" Mr. Editor you look after these things, will you?" And another load is dumped on broad but willing shoulders.

In some such way this man's tasks have grown until today it would require an Atlas to carry the burden. He is the executive head of a commercial enterprise with an annual turnover in excess of a million dollars; he is the printer and publisher of several journals; he is the editor of the leading one of them; he is, in effect, the treasurer and disbursing officer of the association; he is the overlord of every committee, bureau, or council authorized by the House of Delegates; he is or has been the manager of the secretary of the association; he is and, if he is to meet the requirements imposed upon him, he of necessity must be the effective if unseen director of the House of Delegates. In the discharge of these duties he is expected personally to pass each week upon eighty odd pages of literary pabulum and upon the ethical quality of some fifty pages of advertising purveyed to eighty-five thousand readers; he is expected to employ labor, buy supplies, safeguard buildings and equipments and direct investments. Yet in addition to those things he is expected to have vision to see and time to determine the value of progressive legislation; to give direction to bringing forty thousand remaining eligibles into the association; to study social and civic problems; to follow international relations; to keep track of all scientific developments; to undertake the education of the people along health lines; to arise to the demands of a world war; to reform medical

schools; to standardize hospitals; to clean up a pharmacopoeia; to defeat legislation, state and national, inimical to the welfare of the people—these and a hundred and one other things are among those for the failure to do any one or all of which he is placed under indictment by his thoughtless critics. I protest that the wonder is not that some of these things are not done or badly done but that all of them are so well done. The demands are unreasonable and lie beyond the limitations of any man alive.

No. The responsibility lies deeper. It lies back of the editor and general manager, back of the trustees, back of the House of Delegates. It lies with an apathetic membership some of which I am addressing here today, a membership which fails to realize the magnitude of its own organization, of its own assets, of its own enterprise; which fails to appreciate the importance of the autonomy and the solidarity of the profession, which each and every one of its members, which fails to comprehend its sacred obligations to science and to humanity; which fails to insist that, for the fulfillment of these obligations, it is necessary to maintain and enforce the McCormack policies, which, as we have seen, have been so largely supplanted.

The remedy? First, thoughtful attention to the whole situation by every individual member; second, deliberate consideration in and by every county medical society; third, the transmission of impressions, conclusions and suggestions from county societies; through their delegates to State meetings; fourth, the equally careful consideration of the subject by the House of Delegates in each state and the definite instruction of its delegates to the national meeting. The time to begin this line of action is now—now! In doing so, attention may be given with advantage to certain specific questions: Is the present basis of representation in the National House of Delegates just and equitable? Are the meetings of the House of Delegates long enough in duration? Ought they to be held coincidently with the annual meeting of the Association? Ought there to be a regular *ad interim* meeting of the House of Delegates held at the headquarters of the association? What amendments must be enacted to restore the lost powers and prerogatives of the House of Delegates? What definite limitations are to be placed upon the powers of the trustees? What necessary amendments must be adopted to develop the various functions of the association through the development of agencies that shall be at once co-ordinate and autonomous under the general provisions of the House of Delegates? What shall be the various functions of the association to make it fulfill its natural obligations to the profession and the public?

Thus, my friends, let us begin at the foundation, with the members, with ourselves, for the systematic re-establishment of democratic control of our own assets, our own interests, our own activities, our own destinies. Thus let us begin at once to secure the re-establishment of the McCormack policies. Thus let us see to it that McCormack dead shall be even greater than McCormack living. But what today shall be our estimate of his value? What shall be our measure, not of the length, for the length of immortality is measureless, but of the breadth of his immortality? He ministered to many. To multitudes he brought health for disease, pleasure for pain, joy for sorrow. The wave of his beneficent influence, now broad, shall continue to widen into an all embracing circle. If, in the Roman Republic, he was honored who lead a hundred how much more shall we honor this man who, in this, the Great Republic, was the leader of many thousands, the benefactor of many millions.

SOME PERSONAL SKETCHES.

It is difficult to select from a life so crowded with interest as my father's was those incidents which should be published in a Memorial of him. This is especially true of one so devoted to him. Associated with him in an unbelieveable intimacy, taught, first, by my mother, and later, confirmed by my knowledge of him, that he was always right and just, I so hung on his deeds and actions that they all come trooping before me as I seek to choose those which should be preserved here.

Father's father was born near Clones, in County Fermanagh, Ireland. His maternal grandmother was a Jackson, a near relative of Andrew Jackson. Father's mother was Elizabeth Brown, whose maternal grandfather was a Baird, after whom Bardstown was named. The Browns, Bairds and Reeds, all relatives, were of Pennsylvania dutch extraction and were amongst the early immigrants to Kentucky. Grandfather Brown was a soldier in the War of 1812 arriving in New Orleans just in time to see the victory over the English there. There were sixteen children in the McCormack family. Four were born in New York and the others, of whom father was the second, on the family farm near Howard's Mill in Nelson County, Kentucky. This farm lies beautifully along the banks of the Rolling Fork of Salt River, nestling in the hills that completed its natural

boundaries. The "Old Neighborhood," as we all called it, was isolated with a completeness that almost has no counterpart now. Life on each farm had to be carried on practically without the co-operation of the rest of the world. Grandfather McCormack was an educated, travelled, cultured man, a natural leader, compelled by the very nature of his environment to concentrate his interest upon the maintenance and rearing of his family. He taught them especially to work, making them believe in the nobility of labor and service. He led them to walk in the fear and admonition of the Lord. Family prayers were held nightly and the daily incidents of the lives of each of the family were laid before their Master in a kindly, firm way that made them want to do right. He built a Methodist Church near the family home in which he conducted the services between the rare visits of the ministers.

In 1868, father attended his first course of lectures in the Medical Department of the Miami University at Cincinnati, riding horseback to Louisville and thence by boat to Cincinnati. He frequently pictured his arrival on the wharf there, a green, clean, fearless fellow, who had not been in school since the thirteenth year, but who had labored hard on the farm by day and worked by candle light at night studying by himself the fundamental things that enabled him to be the cultured, genial gentleman that he was.

The drayman wanted too high a fare for the cartage of his trunk so he shouldered it himself and walked the mile to the college. On his second day an incident happened that marked his whole life. A student, in fun, asked if he wanted to join the Senior Quiz. Upon being told it would cost nothing, he signed up, not knowing what it was but wanting every experience that he could get. The next night the class was called together and John T. Murphy, one of the greatest medical teachers of his time, was quiz master. Seeing the new name on his list, and assuming that he had had a year's education in some other institution, he called on McCormack first asking him what he would do if called to see a child with diphtheria. Without a moment's hesitation, he naturally replied, "I would send for a doctor." The old professor, accustomed to boyish impudence, decided this was such a case and irritably asked then, "Suppose there was no doctor in a million miles, what would you do?" The reply, " I would call for the knowingest old woman in the neighborhood," brought down the laughter of the class and added to the irritation of the professor. "Suppose you and the patient were the only people on earth, what would you do?" The young student thought hurriedly of the medicine he knew about. These were quinine and calomel, Dover's powder and ipecac. He had taken all of them but the last and he never heard of diphtheria so he stated that he would give a dose of ipecac. It happened that at this time that was one of the drugs used in the treatment of diphtheria but Dr. Murphy asked, "Suppose you had no ipecac, what would you do?" Knowing it was an emetic he replied that he would tickle his throat with a feather. "Suppose you had no feather?" "I would tell him to stick his finger in his throat and if he didn't have any fingers I would stick mine there." This concluded the questioning but at the close of the class Dr. Murphy asked him to come around to his office the next morning. The other boys worried him some by telling him he would probably be expelled but, upon his arrival, Dr. Murphy asked him a few questions about himself and then seated him at the table with some blank paper and asked him to write the story of his life and all he knew and he would be back in a few hours to get the result. It only took a sheet to tell his simple story but it appealed to the worldly experienced old man and he took him in his office as his only student and handed down to him the wise medical lore he had received from the fathers, and father always felt a debt of gratitude to him that he tried to repay to the medical profession in the services which he gave it.

He worked on the farm for a year after finishing his first course of lectures to make the money to pay for his second course. He won the valedictory of his class and won first place in the competitive examination of the Cincinnati Hospital. His valedictory was delivered in a suit of home-spun, the wool for which was grown and the thread spun and woven on his father's place. One of his classmates wanted him to have a dress suit in which to deliver the address but he said he had won it in this home-spun suit and he reckoned it would do to deliver it in. His thesis was on the physical and mental equality of men and women. It was so far in advance of the times that many members of the faculty objected to its delivery.

He returned to his father's home and began his practice there. It covered a radius of twenty-five miles in every direction and he led a strenuous life. His first epidemic experience was with cholera in 1873 and with the yellow fever of the same year. During this time he performed many surgical operations, among them one of the first Cesarean sections West of the Alleghenies. Dr. David Yandell, the most distinguished surgeon in the West, had been called for this case, but, arriving a little late, was so struck by the success of the operation that upon his return

to Louisville he had the Adeundum Degree of M. D. conferred upon father by the University of Louisville. In 1871, he was married to Miss Corinne Crenshaw. During the next year his father's family was stricken with typhoid fever, he amongst them. For six months he struggled through the disease and the posttyphoid sepsis that followed. He was so crippled after this that he was unable to ride the difficult roads of the "Old Neighborhood" and shortly thereafter moved to Bowling Green. He had the good fortune of being associated in practice in Bowling Green, first, with Dr. Lemuel C. Porter whom I can remember as one of those fine types of the old family physician that still stirs our imagination and makes us desire to use them as our models. By 1882, he had saved up a little money and spent six months in Europe doing post-graduate work.

In 1878-9 Bowling Green was visited by serious epidemics of yellow fever. Father had professional charge of all the cases. His only nurses were the devoted Sisters of Charity who were decimated by the epidemic but who never faltered in their overwhelming task of mercy. This service of the youngest doctor in town endeared him to the population of the afflicted section, particularly amongst the old Irish families, which had come to Bowling Green with the building of the L. & N. Railroad, and their friendship and devotion to him continued until his death. It is difficult for us to realize now the bitterness with which the business interests of the town attacked him for saying yellow fever existed there. They wanted it concealed because it would keep the country people from coming in. This was the beginning of his long fight against the ignorance and error that teaches that disease may be concealed rather than controlled and prevented. His service during the epidemic attracted the attention of Dr. Luke P. Blackburn, then Governor of Kentucky, and he was appointed a member of the State Board of Health a year after its creation in 1879. In 1882, he was elected its secretary and continued to occupy this position until he was elected to the Legislature in 1912 and, of course, was really the Chief Health Officer of Kentucky until his death.

The first problem that confronted him was medical education. Following the Civil War many of the male nurses had become doctors merely upon their own announcement and more than one-third of those practicing in the State had not been in a medical school at all. In the session of the legislature in 1882 he caused to be introduced the first medical practice act. The Chairman of the Public Health Committee of the Senate, being a non-graduate himself, put the bill in his pocket and went home with it thus defeating action for that session. Similar action delayed the passage of the first practice act until 1888. It was at first provided that it would be administered by the secretaries of each of the then three cults in medicine, the regular, homeopaths and the eclectics but these three societies met together for the first time in their history in any State and selected father as the secretary of all three for this purpose.

All of the physicians in the State sent in their diplomas and applications and our house was a beehive of industry with my mother and our two servants helping in the packing and unpacking of the diplomas. During this time, he had his first stenographer and it was interesting that Walker D. Hines, more recently one of the most noted figures in our legal and financial world, was this first employee at $10 a month. He was succeeded in the position by McKenzie Moss, since Circuit Judge and now Assistant Commissioner of Internal Revenue for the United States. Every diploma which was sent in had the full certificate written on the back of it in India ink by father personally. It is to be remembered that during all this time the total appropriation for the State Board of Health was only $2,500 a year and his salary was $100 a month. This made it necessary for him to continue to do a very laborious practice in order to support himself, his family and his work. By 1892, several notorious quacks had become registered and in this year the Legislature re-enacted the law adopting the principle which has guided legislation in Kentucky since that time that the interest of the States in the education of those who treat sick people was as to whether they were competent to practice with safety to the public and that the State had no interest in the school of practice to which they belonged. The then Attorney-General announced that this law was unconstitutional and the quack interests combined and carried the case through all the courts. It was during this period that the late Dr. William H. Wathen, then Medical Referee for Jefferson County, and Honorable Aaron Kohn performed their tremendous service with father in the enforcement of this law. The Louisville papers then teemed with the blatant, fraudulent advertisements of these quacks who played like ghouls upon the ignorance of the unfortunate. It is difficult for those living today to understand this, and father always felt that one of the real reasons for the increased longevity that came about in Kentucky during his lifetime was largely due to the eradication of this class of rascals.

In 1886, the Blue Grass section of Ken-

tucky was visited by a terrifie epidemie of pleuro-pneumonia in cattle. A special session of the Legislature made an appropriation of $30,000 for its eradication. This was accomplished within two months at an expense of less than $3,000, although it had cost more than a million each in Vermont and New York to get rid of even smaller epidemics.

The physicians of the State gave him a degree of co-operation that made his work possible. He always felt that in every way he was their representative and worked solely with this end in view. He realized that an effective medical profession was essential to public health. During all of these years practically one-third of the physicians in the State gave their services without remuneration as members of boards of health and health officers and medical referees, rarely receiving from the public even the gratitude which should have been their due. Throughout his term as State Health Officer he stayed in Frankfort during the sessions of the General Assembly, advising with its members as regard to public health legislation. He was uniformly supported by the Legislature because they recognized his utter disinterestedness and his desire to upbuild the health of the State. Bitter fights were launched against him by the quacks and, in later years, by political interests with the desire to keep the legislation busy so it wouldn't have time to consider the real problems of the State which confronted them. He emerged from all these attacks and investigations with a clean slate and he left here in the files of the Board a check for every penny expended by him during his lifetime of service.

For many years Louisville was the center of medical education in the United States. More men were graduated here than from any other City. At one time nine schools existed. Their methods of training contained many defects. Upon his motion the Council on Medical Education of the American Medical Association had been created and the deans and owners of the various medical schools in Louisville came together and generously sacrificed their holdings in their desire to better medical education and at last we had our one Medical Department of the University of Louisville left.

In 1898, he submitted to the Kentucky State Medical Association the plan of reorganization which was adopted and which commanded national attention. Heretofore this society, which had been in continuous existence since 1851, had been a small organization of the most prominent physicians in the State. Its membership had never exceeded 350 and there had never been more than 100 men in attendance upon meetings. The old minutes show that at a number of meetings there were between 25 and 35 present. They were largely taken up with personal attacks between the members and trials for what would now be considered trivial violations of the code of ethics. Unquestionably this Society was responsible for great progress. It kept alive the best in medicine but that best was slow in reaching the entire profession and, through them, the people, and the re-organization of the Association, accomplished at Paducah, and the adoption of its present constitution and by-laws made it a democratic organization, controlled by a representative body elected like the State Legislature from every county in the State. There are fewer reputable men now outside of the Association than there were in it before its re-organization and the attendance at its annual session average a third of the physicians of the State. What this has meant to medical progress and to improved health conditions is incalculable. This improvement, brought to the attention of the American Medical Association, resulted in the appointment of a Committee on its re-organization by President Keen at its Philadelphia session. Father and Dr. George H. Simmons and Dr. P. Maxwell Foshay, then of Cleveland, Ohio, since Medical Director of the Mutual Life Insurance Co., of New York, were associated in this monumental work. The new constitution was adopted at the St. Paul meeting of the American Medical Association and revolutionized organized medicine in America, making all of the advance in State medicine which has resulted in the last twenty years possible. After the constitution had been adopted the work of the Committee was continued and father met the State medical societies in every State, speaking before the legislatures in more than half of them, and was in almost every county in every State helping to build up and inspire local organizations. On other pages of this issue will be found selections from the newspaper reports and editorials in the various states showing the broad extent of this work. This could have been multiplied by thousands had it been necessary to show the broad influence which he exerted during these years.

There is also reproduced, that it may be preserved, his own notes on the address which he delivered. While this shows clearly and concisely the great principles for which he lived, it gives little idea of the address as it was delivered by him. The beauty and clearness of his voice, the sincere glint in his eye, the confidence engendered by his open countenance and the sparkling anecdotes with which he illustrated the various paragraphs, can only be remembered.

No other thing shows the variety of his experience better than the development of the Kentucky Sanitary Privy which a great sanitarian has said was the best practical contribution to the sanitation of the home since the days of Moses. At the Conference for Education in the South, held under the auspices of the General Education Board in Nashville in 1910, there was a discussion by those present of sanitary conditions in the rural sections of the South. At that time the statements made would have been equally true of practically every section of the country. There were practically no sanitary conveniences in the rural homes. The toilets that existed were worse than none. During the Conference, President Coates, of the Eastern Normal School, handed me on a little slip of paper the requirements for a sanitary toilet. They were a follows: (1) It must be water tight; (2) it must be fly and mosquito proof; (3) the odor must not be bad so it can be close to the house where it will be used; (4) it must be reasonably cheap and easy of construction; (5) it must be self-cleaning.

Upon my return to Bowling Green I laid this before the members of our staff and it was agreed that we would devote our entire time to an attempt to devise such a product. An investigation of all existing types was made. Hundreds of models were built and found defective but at last father devised the present principle, building the first one at our home out of gasoline tanks and afterwards planning the concrete septic tank, which is known as the Kentucky Sanitary Privy. Tens of thousands of them have been built and are in successful operation and he considered them his greatest contributions to sanitary science. The bulletin describing them has been republished in almost every language and they have been built in all of the countries of the temperate and tropic zones. It is pleasant to recall his gratification at the numerous letters of approval that came to him in his latter years from every part of the world for this work.

His last work was in the passage of the law providing for the recognition of new schools of medicine in 1920 and in its wise enforcement. He had always recognized that any new school of medicine would necessarily meet the opposition of those who had been taught by the older methods which had been tried out and tested by time. The public interest, however, is that anything worth while should be permitted to be given a trial and should be discarded only as soon if and when it is found useless. It is essential that those who practice the healing art, however, should have an intimate knowledge of anatomy, the science of the structure of the human body; of physiology, which teaches the functions of the various organs which compose the human body and of pathology, which is the science of the diseased conditions of human organism. Besides this, the practitioner must know how to recognize those diseases which spread from person to person unless properly cared for. Knowing these fundamentals thoroughly, the public may then choose which method of treatment it prefers. For this reason, he recommended to the General Assembly, and it passed, the law providing for an examination by the State Board of Health in the fundamental branches named but authorizing the appointment of examiners from the various schools or cults which examine in the branches peculiar to their science. It was always a cardinal tenet of his law enforcement that those who treated the sick belong to a body like the priesthood and it was their duty to teach the public it was essential that they should not advertise things which were untrue through the public prints. This requirement is fatal to quackery and quacks naturally object to it. His successful administration of this law is already indicated in its effect upon the school of Optometry. Under wise leadership, the optometrists of Kentucky have already become a profession. They are studying harder than they ever did before. They are giving a far better service to that part of the public which they do serve. I will always feel that one of the finest tributes that was ever paid to Father was of the appearance at the recent examination of practically every optometrist from the Eastern part of the State. These men had already been licensed under the exemption clause of the law but they wanted to show by taking the examination they were competent to be members of the profession to which they had given their lives.

It is harder far to tell anything about the personal side of my Father's life. Not so well known, it was far the most beautiful part of him. More than almost any man I ever knew he loved his home. He loved the little details of it and enjoyed seeing things run smoothly there. No outside consideration was ever so important as to cause him to fail to see that the hinges were oiled and that everything else was done to make things run smoothly at home. I don't believe he ever had a selfish thought in his life.

From my earliest recollection we were full partners. As a child I recall his talking with me about his business and his work and I grew up with the feeling that he expected me to share his life. While I was away studying medicine he had prepared his patients for my return by telling them I would be far better

qualified than he had ever been and he arranged his practice so that I fell naturally into it.

When I had started away to school he gave me a check book telling me that I knew what his income was and he was certain I would be as economical as was necessary but he wanted me to have what I would really need and to get it and he would arrange to raise the money for it. He never questioned an expenditure. Upon my return to Bowling Green, he deeded me half of his property and gave me half of his bank account. From then until his death we never owned anything separately.

He was a peculiarly sensitive man. For those who prey upon the public, such as the advertising quacks or the dopester, he had no respect and showed no mercy, but criticism or abuse from those whom he had esteemed hurt him just as their approval urged him on. After I grew up, I don't think he ever did a single thing with which I was not acquainted and as I look back over those years of delightful association with him I can say of him, as can be said of few men, that I do not believe he ever had an unworthy thought, much less did an unworthy deed. I never heard him use a vile word and never heard him tell a story which he couldn't have told in the presence of ladies. He saw the good in all those with whom he came in contact and tried to use it, even if there were but little of it, if it could help to obtain his objective. He asked that no monument be erected in his memory. He felt that if he had accomplished anything—we who were left behind all know he had—that it had been in the laying of a foundation on which would be erected a public health structure that would reach into the home of every citizen of Kentucky and would make it a happier, more wholesome place in which to live.

HIS NATIONAL WORK.

As Chairman of the Committee on Organization of the American Medical Association, Dr. McCormack delivered his address, "The New Gospel of Health and Long Life," in almost every county in the United States. The basic notes of this address are here published together with a few of the press notices and editorials and some personal letters, showing how far these addresses and the influence he exerted along with them reached and changed public sentiment toward the medical profession and in favor of more effective public health organization. It is of interest that more than half of the State Health Officers in this country came into the public health profession under his inspiration. He was the organizer and first President of the Conference of State and Provincial Health Authorities of North America, and no other one man's influence has been greater in improving health conditions and lowering the unnecessarily high sick and death rate in these United States.

THE NEW GOSPEL OF HEALTH AND LONG LIFE.

By J. N. McCormack, M. D., of Kentucky.

The greatest asset of any nation, its most important resource to be considered, is that represented in its vigorous population, its children, women and men. In fact, farms, mines, forests, factories and similar things called wealth, have little more than an abstract value, except as there is such a population to operate and enjoy them. The drain upon this asset in this country from diseases now known to be preventable, and as a result of vicious and immoral living is estimated at more than one-third of the entire sick and death rate every year. The recognition of this drain and its causes, and a comparative study of the results of better sanitation in other countries, and in some sections of our own country, have so impressed economists, teachers and other leaders of thought, that the American Health League, a lay organization of 50,000 members, has been formed, with headquarters at Yale, to arouse and educate public sentiment on the subject.

These economists figure that there is an average of 1,500,000 deaths in this country every year, with 4,200,000 cases of sickness, affecting the comfort and happiness of 5,000,000 homes and 25,000,000 people. After careful study they tell us that over one-third of this enormous sick and death rate, a tax upon the people almost beyond calculation, can and should be prevented. As an argument for peace, it is shown that 210,000 men were killed in both armies during the five years of the civil war. As an argument for healthier living, it is shown that 750,000 persons have died from tuberculosis in the last five years and that about 1,000,000 are constantly sick of it. They show 250,000 deaths and 2,500,-

000 sick from typhoid fever in the same period, and a large sick and death rate from diphtheria, measles, scarlet fever and other diseases preventable with present knowledge, and urge that with proper governmental assistance, this life-saving knowledge should be constantly extended. It is then shown that in ten years our national government has expended $40,000,000, and now proposes to appropriate $250,000,000 more, to prevent tick fever in cattle, cholera in hogs and chickens, pests to crops and trees, and to protect other interests having money value, while in all its history it has never spent a dollar or lifted a hand to protect the people from these far more important domestic pestilences. There are experts and funds in abundance at Washington to go anywhere for investigation, or to prepare literature in regard to any animal or plant disease, any agricultural resource, water power, or other condition affecting commercial interests, but the citizen will inquire in vain for information about protecting his family from typhoid fever or other sickness.

Most of these facts are well known to medical men. They have long insisted that good health can and should be made more contagious than sickness, and, in direct conflict with their own interests, have urged the health reforms which would bring it all about, but in most states, and in the nation, have met almost constant indifference or antagonism from both legislative bodies and the people. This was in part because to the laity, medicine has always been an occult, mystic science, and still more because, until recent years, ours has been a discordant profession. This discord was in small part between the different systems of practice, but far more between physicians competing for the same practice, and was often fostered by their lay friends. The same thing existed in the clergy until recent years, dividing the religious world into hostile camps, and in all the other isolated vocations, lawyers alone living in the aggregate and escaping this curse.

A few years ago we were aroused to the enormity of this evil, to its baneful effects upon us and the people, we banded ourselves together for its extermination, probably never before did a reform so sweep a profession, and now, regardless of schools or pathies, ours is rapidly becoming one of the most harmonious of callings. This discord had existed so long, however, that it created a sentiment, a prejudice, if you will, against doctors, which is a habit of thought with most people, except as to their own physician, which did not disappear with the removal of the cause, and in spite of the rapid advances, of the professional, and the heroism and individual worth of its members, this is almost as strong as it was a generation ago. I speak in the light of an experience which has come to few men. I have been a State health official, and as such, represented my profession before my legislature for 30 years, and often before the Congress at Washington. Once or twice almost every day for six years I have spoken on this subject to popular audiences in ever section of the Union, laymen discussing it freely at the close of my talks. In this way I have been able to make a study of doctors and what the people think of them in a very broad way, have found this sentiment almost universal, and it is on this account mainly, that it has been so difficult for us to secure and enforce our legislation.

You will first be shown how this feeling against doctors has affected us as a nation. For lack of authority for medical officers during our war with Spain, we lost 16 of our soldiers from preventable disease for every one dying as a result of battle, and 85 of each 100 were inmates of the hospitals. During the longer and more severe war in Manchuria, with full authority and rank for their doctors, Japan lost but one man from disease for every four killed in battle, and but 15 of 100 were in the hospitals. We had known of this danger to our armies, and had begged for proper authority for our army surgeons, for 25 years, and since these wars, with the object lessons of Cuba and Manchuria before the congress and country we are still begging, and practically the same dangers yet face our armies in the event of a foreign war. Facts of the same kind almost without number might be given to show that except in the emergency of epidemics, no other nation has been and still is so criminally negligent of the health and lives of both its soldiers and its citizens.

Bad as is this record for the nation, that for most states is little better. Probably at least one-third of those sick and of those taken to your cemeteries every year are afflicted with diseases which ought not to occur. About one of every ten deaths are from consumption, and in spite of all the talk about preventing it, you now have a large tubercular population. This is not an inherited disease, and if all the expectorated matter from every case now in the State could be collected and destroyed, as your health officials and physicians are earnestly trying to do, until all now sick of it either recover or die, and other necessary precautions be taken, you would soon have none but imported cases. You have a large sick and death rate in the State from typhoid fever every year. This is not only a preventable, but the most typical of the filth diseases. No one can have it ex-

cept by getting into the mouth something from the bowels or kidneys of some one who has the disease, usually carried there by water, flies or milk. Medical literature abounds with accounts of fatal epidemics from all these sources in cities, towns, country districts and military camps. If these discharges from every case of typhoid fever could be systematically disinfected, clean water and milk provided, and flies gotten rid of, there would be no typhoid fever. There is also a large sick and death rate from diphtheria, dysentery, scarlet fever, measles, whooping cough and like diseases, to say nothing of the cruel slaughter of babies during every hot season from the use of dirty or adulterated milk. One and all, these diseases are a disgrace to our civilization. With clean, healthy living, personal and domestic, municipal and national, they could be so effaced as to have only historic interest. And it would actually cost less to do this than it does to treat and nurse the sick and bury the dead, to say nothing of the pain, sorrow and loss of life prevented.

When we have urged legislation for these purposes, otherwise intelligent congressmen and state legislators have not hesitated to say that doctors asked for these laws for their own benefit, without stopping to consider that in so far as they prevent sickness they diminish their own incomes, the very unselfishness of the movement causing it to be misjudged, as legislators saw no other vocation there working against its own interests. It was because ours is above all a humanitarian calling, charged with the duty of saving life, and in daily contact with the sorrow caused by sickness and death, that it took up this work, just as for the same reason it does more actual charity every day in every year than all other people and organizations put together. Again, all others may profit by their discoveries or inventions, but doctors cannot, their laws requiring that they be made public for the good of humanity. All of this has involved altruistic labor without parallel in human history, unappreciated and obstructed, largely because of the public sentiment fostered by the past discord in our ranks.

Had doctors been as united and taken the same pains to keep in touch with, and guide the people during the formative period of our government as the lawyers did, health and medical boards would always have been as much a part of the warp and woof of our county, state and national machinery as the courts. They ought to have been because more important, just in proportion as health and life are more important than property interests. Since this has been so insisted upon by political economists, an increasing number of our more thoughtful public men are coming to realize, as Gladstone, Disraelli, Bismark, Gambetta and other real statesmen in the older countries did long ago, that a health department at Washington, with laboratories and research workers in proportion to our power and wealth and the vast interests involved, as would investigate the causes of the common diseases not yet understood, to gather, tabulate and make public the facts in regard to every case of sickness and death which occurs in every county and state, with prevention as the only object, is as much a necessity, if our people are to have the benefactions of modern science utilized daily for the protection of their homes and families, as is the Supreme Court of the United States. This is done in other well-governed countries, as it is regardless of expense for domestic animals, crops, trees and similar interests with us, and the time has come for voters to quit sending men to Congress, legislatures, or other positions, who have not sense to appreciate the value of the health and lives of human beings.

For similar reasons a State Board of Health with ample funds and laboratories, and with members so compensated that they can give their full time to this life-saving work, is as important as the Appellate Court could possibly be. And, still more important, a board of health for each city and county, or for the two combined, with frequent inspections of schools, dairies, abattoirs, bakeries, groceries, factories, tenements, sewerage and garbage systems, and with laboratories to which any citizen may bring water, food, drugs, disease products, or anything else suspected as a danger to his family, for analysis without personal expense, is of as much practical importance as any court or other official agency could be. And it is not worth while to try to do these things without a health officer with special training and aptitude for his work, and such a salary that he can devote his entire time to it; for no man can be the kind of health officer here described and practice medicine. The positions are so incompatible that it would be just as reasonable to expect a lawyer to act as judge and support his family by the practice of law at the same time. It would be the best of investments to provide such comprehensive health systems everywhere, as substitutes for the political make-shifts so generally in vogue, because the greatest annual tax upon our people is not that paid into municipal, county, state and national treasuries, but the long unrecognized tax for preventable sickness and funerals.

With such aims and possibilities before it, fully realizing the magnitude of the reform, the obstacles, and the self-sacrificing labor re-

quired to carry it on, the American Medical Association with branches reaching into every State and county, and about 80,000 members, joining hands with all others, individual or organized, who will take part in it, has entered upon a broad campaign of education which it is hoped will ultimately reach every home in this land. In the very nature of it, medical men must lead this movement in most communities, and to better qualify them to do this, a carefully planned post-graduate course, adapted to the needs of all schools of practice, with weekly or more frequent meetings, and attractive rewards for those who complete the four years' work, has been placed within the reach of the profession of every county without cost. Thus, in time it is proposed that an up-to-date doctor will be placed within reach of every family now without one and at the same time leaders for this reform be developed or encouraged.

In addition to its scientific work it is proposed that each county society shall hold joint meetings with teachers' institutes, women's clubs, editors, lawyers, ministers, druggists, business, labor and other organizations, for discussion and instruction as to matters of mutual interest. Later, through teachers and others, the aim will be to reach every school child and family with practical information as to the cause and prevention of sickness. In this plan, the physician is also to be a moral as well as a physical leaders of his people, setting an example of clean, healthy living in his own person and home, urging the same standard of morality for men and women, and securing the co-operation of teachers, ministers and druggists in warning the people, the young especially, of the dangers of immorality, habit-producing liquors and drugs, and all other things at enmity with pure living.

As will be readily seen, this reform involves just such a revolution in the practice of medicine as has gone on so rapidly in the practice of law in recent years. Lawyers were formerly engaged almost entirely in conducting litigation in the courts. Now, corporations and wise business men employ them almost exclusively to keep them out of the courts. So, it is only a question of time and popular intelligence when a large per cent of my profession will be acting mainly as medical advisers for families, to keep them well, instead of the more difficult and expensive task of treating them when sick. All sickness cannot be prevented with present knowledge, but most of the common diseases which are destructive to health and life in children and young people can, and with proper aid from governmental laboratory and research workers, this list should be constantly extended.

Do not get the idea that it will be easy to do all this, or that there is much real popular interest on the subject at present. The newspapers are the best exponents of public sentiment, and are most friendly to this movement, and so long as they give two or three pages a day to the races, foot and base ball and the brutalities of pugilism, and a fourth of a column a week to health news, we may be certain that there is little demand for the latter. The enlistment of political economists and teachers in the movement was the first real encouragement. The insertion of planks in the platforms of both political parties favoring a national health policy, and the campaign of education against tuberculosis, give promise of good if supported by systematic, wisely led lay organization in every section of the country, such as the American Health League is fostering.

Whether it will be necessary for physicians to go into public life in the interests of these reforms, as they were forced to do in Europe, is a question for the future. For a century our legislative bodies, state and national, were dominated by high class lawyers. Better opportunities are now open to this class and such positions are sought by a lower grade of lawyers and others, who make a business of politics. With this change, others have come. The problems before this country were never before so complex or difficult and, instead of being legal and for the lawyer, they are mainly economic, with social and moral elements, which require a higher official class for the solution. Broadly trained business and literary men, teachers and industrial leaders should certainly be selected in such numbers that their voices and votes would be effective. There is a doctor in close touch with almost every voter in this country and it may be better for them to assist in selecting men of the kind indicated than to go into public life themselves.

In any event it is an educational work, and our profession has the knowledge which fits and imposes the duty of leadership. It will involve years of unselfish labor, and all may not be equal to it. How doctors are to be compensated under this new order and whether as many will be needed, we have not stopped to inquire. We know that it opens a new field of unlimited possibilities, that the doctor of the future will be a far more important and useful man than the one of today, and we only ask for such a league with the people, offensive and defensive, as will insure success in every community.

DR. J. N. McCORMACK'S SERVICES THROUGHOUT THE UNITED STATES IN BEHALF OF MEDICAL ORGANIZATION AND PROMOTION OF THE PUBLIC HEALTH

The following letters and press comments relating to Dr. McCormack's public services as official organizer of the American Medical Association, have been compiled from newspapers published in various sections of the United States. The extracts from the press are arranged by states, and the papers in which they appeared are the leading exponents of public opinion in their respective localities. It will be noted that his labors in this field were two-fold: first, to organize county medical societies as the unit of organization of the American Medical Association, and to establish co-operation between these societies in a permanent state organization; second, to enlist the interest of the general public in every community visited in the regular medical profession, and to invite community and legislative support of measures for promoting the public health and prevention of disease. This great service to the medical profession and humanity was discharged by Dr. McCormack with such force, ability and tact, that its wide-spread beneficence continues and increases year by year. No greater monument than this could be erected to his memory.

ALABAMA.

At the High School Auditorium in Birmingham last night, Dr. J. N. McCormack, representing the American Medical Association, delivered a lecture to the medical fraternity upon the general subject, "What the People Should Know About the Doctors and What the Doctors Should Know About Themselves." About 200 persons were present including many ladies.

Judge Weakley said that Dr. McCormack was engaged in the work of organizing the medical profession, not with the object of deriving any privileges themselves, but to elevate and purify the profession, and drive out of its ranks those unworthy members who pretend to practice medicine but are merely practicing imposters.

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Dr. Lewis C. Morris entertained Dr. McCormack at luncheon at the Hotel Hillman yesterday afternoon. Covers were laid for about 200 and nearly all the guests were members of the Jefferson County Medical Society. The luncheon was spread in the large dining room upstairs. The guest of honor being called on for a speech, made a most interesting and animating address. While he talked of practical matters pertaining to the great profession he represented, his remarks were interspersed with anecdote and humor.

When Dr. McCormack had concluded his talk, loud calls for the Reverend Doctor J. W. Stagg brought the popular divine to his feet and a felicitous little speech, enlivened with some racy stories was the result. Altogether the entertainment was as delightful as it was informal.

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The next day the morning paper in its editorial column said: "It is to be regretted that the High School Auditorium was not filled to overflowing last night, because the lecture which Dr. J. N. McCormack delivered was a highly instructive discourse of this character. Every intelligent layman in this city should have heard it. He invited and urged the support of every profession, avocation and class in aiding the medical men to secure better laws, to execute more fully the laws we have and to unite in preventing the spread of diseases which are clearly preventable.

If Dr. McCormack's lecture does nothing beyond bringing the laity and the medical men into closer touch with each other and creating a clearer understanding between them, it will have borne good fruit, for this condition must eventually make for the very end set forth in the eminent lecturer's address, intelligent co-operation, the enactment of needed legislation, the control of contagious diseases, the prevention of consumption and other plagues.

Among the many pleasant incidents on his lecture tour in Birmingham two old friends came together at the new High School last night when Dr. George M. Morrow and Dr. J. N. McCormack met in the office of Superintendent Phillips just before the lecture by the latter and shook hands. They had been college mates years ago and the meeting was a joyous one.

"We even slept together," said Dr. Morrow, in speaking of his association with Dr. McCormack. For a few moments they chatted about old times and several good laughs were indulged in when some scenes and incidents of those days were recalled. However, their love feast was cut short by the pressure of prominent men being brought forward for an introduction to the visiting medical men. Dr. McCormack has traveled widely and is one of the best informed men one will meet. He is a most affable gentleman, a genial companion, a good story teller, an entertaining and instructive speaker.

That Dr. McCormack was pleased with his reception here was evident by his several ref-

erences to it. So he goes away with the most pleasant recollections of Birmingham and its doctors and laymen.

ARKANSAS.

Dr. McCormack addressed a good gathering at the Central Young Men's Christian Association last night at which a good part of his speech at the House of Representatives yesterday afternoon was repeated but the most interesting and probably the most important part of his address was that devoted to the needs of the State Board of Health. He declared that Arkansas is the last in the procession of the States in this matter. Led by every other state in the Union with reference to medical legislation, and the only Commonwealth not making some provision for the maintenance of the State Board of Health, Arkansas, he declared, is far behind its possibilities and opportunities. The speaker urged a mass meeting of physicians, lawyers, teachers, clergy and druggists to unite upon a plan whereby the legislature could be impressed with the necessity of an appropriation for the State Board of Health. Referring to a number of patent medicines he said they make temperance women drunkards and babies morphine fiends before they are weaned. The address of Dr. McCormack was heard by a large number of prominent people, many of them legislators who either did not hear him in the afternoon or who desired to hear him further at the Y. M. C. A.

His argument apparently made a most favorable impression on his hearers and his friends in this city are greatly pleased with the result of the meeting.

ARIZONA.

Dr. McCormack said New Mexico and Arizona are two of the most important fields for health work. Both new states have the examples of the whole world to guide them. They should be able to make a right beginning and take measures for the protection of public health and the prevention of disease that will make them models for the rest of the world to follow. By choosing the good eliminating the bad to form health departments that should be able to choose the best and simplest laws from among those that other states have adopted and tested.

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Monday evening Dr. McCormack spoke at Flagstaff and Tuesday night at Prescott. The people of Flagstaff were particularly interested in what he said about the slaughter pen from which comes their meat.

There was a storm of applause when Dr. McCormack arose to address the audience at Phoenix. His talk covered a wide range of topics. He compared the atmosphere of Phoenix with that of Denver to the advantage of Phoenix. Among the bad examples set by older states and cities was their failure to provide for sewers. Even now many large cities are spending millions of dollars for the disposal of sewerage which should have been provided when these cities were founded. While the greater part of the lecture was a recital of cold facts, they were so overpowering as to be of general interest. The doctor quite frequently injected amusing stories to press home special points of interest, so the lecture was entertaining as well as instructive. The address was printed in full in the Arizona Republican of Phoenix

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The Prescott County Medical Society offered eight prizes for the best essays on Dr. McCormack's lecture.

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Dr. McCormack's visit to Phoenix is most timely for the entire city is stirred up and shouting for sewers and paved streets.

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At one point in Arizona the daily papers said: Dr. McCormack who lectured at the Court House Monday night, is one of the greatest exponents of good health that this country has produced. The audience which heard his lecture recognized this and deplored the fact that all their kith and kin were not within the sound of the speaker's voice. Dr. McCormack is interesting because he speaks the truth, because he talks entertainingly and convincingly with the facts behind his arguments; because he strikes out fearlessly and then pours the oil of kindness and humanity upon the wound he is compelled to make. His office is not merely to criticise, but to correct. His lecture of two hours covered a field as broad as humanity itself. The memory of his good advice should remain with us and bear fruit.

CALIFORNIA.

Dr. McCormack lectured in almost every community in California. The doctors gave him the glad hand, and the press throughout the state showed the deepest interest by reports of the good work he was carrying on. As he continued this national work his vision of the futnre expressed: "Do not get the idea that it will be easy to do all I have asked of you and the nation, or that there is really much popular interest in it at present. The newspapers are the best exponents of public opinion and are most friendly to this

movement, and so long as they give two or three pages a day to the races, football, baseball and the brutalities of pugilism, and a fourth of a column a week to health news, we may be certain there is little demand for the latter. The enlistment of political economists and teachers in the movement was the first real encouragement. The insertion of planks in the platforms of both political parties favoring a national health policy, and the campaign against tuberculosis, gives promise of good if supported by systematic, wisely led lay organizations in every section of the country, such as the American Health League is fostering.

It is an educational work, and our profession has the knowledge which fits and imposes the duty of leadership. It will involve years of unselfish labor, and all may not be equal to it. How doctors are to be compensated under this new order, and whether as many will be needed, we have not stopped to inquire. We know it opens a new field of unlimited possibilities, that the doctor of the future will be a far more important and useful man than the one of today, and we only ask for such a league with the people offensive and defensive, as will insure success in every community."

NORTH CAROLINA.

Dr. McCormack said at Raleigh, "There is great need for a general crusade against (1) typhoid fever, (2) consumption, (3) malaria and (4) hookworm disease. With these four maladies brought under better control there will be better health and the death-rate will be greatly reduced, and we shall go a long way toward realizing Professor Irving Fisher's declaration that human life might be lengthened one-third in our own time by the observance of proper hygienic and sanitary precautions. And just here a word of tribute is due Dr. R. H. Lewis, Secretary of the Board of Health, who with little means has done much, and who is chiefly responsible for the creation of the new post and the selection of Dr. Rankin."

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At Greensboro, the County Medical Society entertained Dr. McCormack and at night he gave a public lecture in the Court House on the subject of Public Health.

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The Wake County medicos were addressed by Dr. J. N. McCormack. The meeting began at noon in the Mayor's office and in his address Dr. McCormack advocated a thorough organization among the medical men and greater co-operation in the advancement of scientific work. The address was a practical and valuable one and at its conclusion a committee was appointed to perfect such a school of medicine and surgery among the profession as was outlined in the address of Dr. McCormack.

* * *

By special invitation of the General Assembly of North Carolina, an address was delivered before the Legislature in the House of Representatives at Raleigh, February 4, by Dr. J. N. McCormack, of Kentucky, on "Why and How Good Health Should Be More Contagious Than Disease." On the following day, appreciative resolutions were passed by the Legislature and ordered transmitted to Dr. McCormack.

"The special feature of Dr. McCormack's work is the universal endorsement it has received, and that wherever he has once lectured he has always been urged to return."

* * *

Dr. McCormack addressed an appreciative audience in the auditorium of the Y. M. C. A. last night on "Things About Doctors Which Doctors and Other People Ought To Know." These addresses were made to the physicians and public in every state in the Union in the interest of pure food, pure drugs, better sanitary and hygienic conditions and better doctors. It is a fact greatly to be regretted that every man, woman and child in Jefferson County was not present last night for Dr. McCormack is an interesting speaker and aroused enthusiasm among his hearers on this very interesting subject.

Dr. J. L. Caldwell, who for a number of years was the pastor of the distinguished speaker in Bowling Green, Kentucky, presided at the meeting last night and introduced Dr. McCormack in his usual easy manner.

SOUTH CAROLINA.

"After the most excellent address, which was made by Dr. J. N. McCormack, of Kentucky, at the Greenville Female College Auditorium, Thursday evening, May 4, Dr. Z. P. Cody, of the First Baptist Church, offered the use of his church to the medical fraternity and to the public at large for a meeting to be held next Sunday afternoon for the purpose of formulating and putting into practice the plans as outlined in the address of Dr. McCormack, which plans, when put into practice, will mean so much to the welfare and uplift of the City of Greenville and surrounding country, which will educate the people and put them on a higher plane morally, physically and mentally. It was suggested that a committee composed of members of

the medical profession, and dentists, the lawyers, the press, the laymen, the women's clubs and the clergy be made, and that this committee report at the meeting to be held in the First Baptist Church Sunday afernoon. All spoke in the highest terms of commendation of Dr. McCormack's address and heartily endorsed the plan and policies as outlined therein."—The Daily News.

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In Columbia, Dr. McCormack said in his lecture, "Doctors are to become advisers in the future. Medical science is devoting itself now more to the prevention than to the cure of disease, and so rapidly is practice conforming to the new policy that many physicians give more advice than medicine, and advice is being given now not only as a means of prevention, but as a means of curing, once a disorder has manifested itself.

"This innovation in practice results from an enlightenment of the people themselves as to disease. The world first thought that disease was the penalty of sin, and that the cure was in the works of penance. Afterwards, it came to regard it as somewhat accidental and to be cured with drugs. It is questionable if this change of popular theory represented an advance or a retrograde step. Perhaps, though, it brought us to the point from which alone we could have proceeded to the present enlightened ideas as to disease."

* * *

Dr. McCormack delivered his address at Columbia, Greenville and all the other principal cities of South Carolina where he was greeted by the medical profession and fine audiences.

COLORADO.

The morning paper of Greely, Colorado, said: "Every father and mother getting this edition of the Republican should read carefully Dr. McCormack's lecture that was delivered in Greely. It teems with suggestions, good advice, things to shun, and things to guard against especially where the health of children is concerned. And remember the Doctor's admonition, "An ounce of prevention is worth a pound of cure." The entire lecture is given on another page under the caption, 'Making Health Contagious'."

* * *

Dr. H. R. Bull, of Grand Junction, Colorado, wrote to the office of the American Medical Association in Chicago: "We were very much gratified to have Dr. McCormack with us, and we feel that his talk to the members of our profession was timely and will be productive of much good. The public lecture was well attended by a highly appreciative audience of our good people.

* * *

In Denver, Colorado, Dr. McCormack met the opposition of the League of Medical Freedom who held a meeting in the Brown Palace Hotel and were addressed by one of the members of the faculty of the Kansas City Medical College, who deplored the fact that compulsory vaccination was in force.

At another point in Colorado a disgruntled osteopath expressed opposition but this was a small rift in the general appreciation of the profession and people whom he addresed throughout the State.

CONNECTICUT.

Under the ausices of the Associated Civic Societies of New Haven and of Yale University, a mass meeting was held yesterday afternoon in Woolsey Hall on the matter of increased health regulations by the Federal Government. Governor Woodruff was the presiding officer of the afternoon and introduced the speakers. There were two addresses on the program, one by Dr. J. N. McCormack and the other by Professor Irving Fisher, of this city.

Among the points brought out in Dr. McCormack's speech was that a great general health organization at Washington, endowed in accordance with the power and wealth of our Federal Government, engaged every day in such laboratory research work as would develop the causes of many diseases not yet understood, with such a comprehensive system of collective investigation as would make it possible to gather the facts in regard to every case of sickness and death which occur and utilize them in preventing other sickness, and discharging the other functions belonging to such department, is just as much a necessity, if our people are to have the benefits of modern scientific knowledge applied to their daily needs, as the Supreme Court of the United States.

Professor Fisher's address was on the topic of "The Winning Fight Against Disease." He laid especial emphasis on the matter of diet as an aid in increasing endurance in man.

NORTH DAKOTA.

On November 9, 1909, Dr. McCormack as reported by Dr. George McIntyre at Mayville, North Dakota, "Gave us a great talk, just the thing and we want more of it. One of our papers printed the entire lecture. When a

good thing is said we want every one to know it."

* * *

An editorial in the Hillsboro morning paper said: "It would be impossible to give a short and satisfactory synopsis of this lecture. Justice could not be done it in that way, and it is our intention to give the lecture in full in a later edition.

The local association deserves great credit and the thanks of the community for securing Dr. McCormack to give his lecture in this district."

* * *

The Wahpeton Times said: "The lecture given by Dr. McCormack last Monday night in the High School Auditorium, probably gave more enjoyment and genuine instruction than any that has ever been delivered in Wahpeton. The auditorium was well filled, and all present listened with closest attention for nearly two hours while Dr. McCormack expounded startling truths with vigor and clearness. The time is ripe and the people are eager to be instructed, and with the co-operation of physicians and laity much good must be the result."

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At Dickinson, North Dakota, a district medical society composed of physicians of Southwestern Counties is the result of the visit here of Dr. J. N. McCormack. The Southwestern Medical Society was launched with good membership. A plan of campaign for the betterment of the general health in this section is to be undertaken by the Society.

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At Bismark, an editorial in the Tribune of October 3, 1909, said: "The address of Dr. McCormack was of interest and will do good. Nothing is a better asset to a community, a State, or a Nation than good health. It is to be hoped that Dr. McCormack's lecture may spread through the country, reach far and sink deep and that the local physicians may unite to keep people aroused to the remembrance of its lessons."

* * *

At Devil's Lake a good sized audience assembled in the Court Room to hear Dr. McCormack, of Bowling Green, Kentucky, tell "What You Ought to Know About Doctors." His lecture was printed in full in their daily paper.

SOUTH DAKOTA.

The initial meeting of the Twenty-seventh Session of the South Dakota State Medical Association was opened with a good attendance of physicians from all parts of the State. "The leading feature of the first day was the lecture last night by Dr. J. N. McCormack, who spoke in the new theatre to a very large audience. It was an excellent heart to heart talk on timely, important matters, frequently touching on delicate ground, yet offending none, as the great earnestness of the speaker was apparent and he held his audience from start to finish. Seldom is it that a Yankton audience was impressed as it was last night and most people would call the lecture a most opportune talk on subjects that are too little brought before the public. Honorable C. H. Dillon presided and stated he supposed he was called on to act as chairman because doctors did not like to take their own medicine.

"Dr. McCormack has been engaged in his present work five years and has lectured in every state in the Union, originally lecturing in his native State where he first delivered his important message to the laity."

At the close of the address remarks were called for. The Reverend F. V. Stephens said he had found the lecture most refreshing and was glad to hear a man talking in plain Anglo-Saxon, and said the subjects treated were the great need of the hour. President Warren, of the College, said the frank criticism was helpful and that he looked for the early coming of the reform for the protection of the schools and human life. Others spoke and adjournment was had at a late hour.

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An editorial from another South Dakota paper: "The address given by Dr. McCormack last evening was listened to by a large enthusiastic audience. Each one present felt that the doctor knew what he was talking about and he did not hesitate to point out conditions confronting the medical profession as they actually are, even though it might seem like disparagement. He certainly did not have an ax to grind but is thoroughly filled with the nobler impulse and the desire to raise the profession to the standard it should reach. To do this he pointed out very clearly the duty of the laymen, who now is one of the chief obstacles in the way of attaining this height. The Doctor was quite right in conveying the impression that any attempt to ameliorate conditions is confronted with a serious handicap in human nature itself but he is very hopeful and while he pointed out that the U. S. Government is spending annually vast sums of money to stamp out various diseases among livestock and pests that prey upon agricultural products not a dollar is expended to stamp out diseases that prey upon mankind. He advised the most diligent co-operation among boards of health, county school officers and citizens in general. One feature he advocated and which seems

the most reasonable to us was the establishing in every county seat in connection with the other county officers, of a laboratory in charge of an expert, not however a political officer but under the charge of men who are best qualified to render the service required. On every hand at the close of the lecture were heard the heartiest expressions of approval by both visiting doctors and citizens. It was very plain that the message struck a harmonious cord in the heart of all hearers."

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At Sioux Falls, Dr. McCormack told the people that the places where their meat was dressed were filthy beyond description. The chauffeur who took him and the City Health Officer to the abattoirs was sickened by the sight and the odor. Dr. McCormack's verdict, "The worst I have ever seen." And the seriousness at this indictment is better understood when it is stated that he has visited nearly every state in the Union.

The Watertown daily paper said: "As a result of the lecture delivered in the Grand Opera House last evening by Dr. J. N. McCormack, of Kentucky, Watertown will within a short time have a Health League. By resolution, the people present at this meeting decided upon this course. All who were present felt amply repaid for coming out to hear Dr. McCormack's address which is repeated in full in this paper."

DELAWARE.

Dr. J. N. McCormack, who is to address a public meeting at the New Century Club next Thursday evening, is opening a door to the laity which has been almost universally closed. He addressed the public as an intelligent body who should be co-workers with the physicians. He claims that the co-operation of a receptive laity and a medical body willing and eager to instruct, means better preventive medicine, better sanitation, better hygiene, subjects little known by the laity, but which, when better made known to them, will mean a great saving of human life. Dr. McCormack has had a broad experience. Old enough to possess wisdom derived from experience, he still possesses the inextinguishable fires of youth. He is a man of commanding presence, possessing a genial personality and the ability to infuse his own quaint wit and humor into the question under consideration. He is singularly and admirably adapted for public speaking and to present his serious questions to a mixed audience in such a way as to entertain his hearers and yet arouse their serious consideration. The well nigh universal report received from all the places where he has spoken in the last three years is that he is one of the most genial and magnetic lecturers that has ever been heard in this State.

The work that Dr. McCormack is doing is of greatest importance. It is most desirable that every community to which he may go shall derive the greatest possible benefit from his visit.

Dr. McCormack said at Wilmington before the New Century Club that his lecture was on "Some Things about Doctors that Doctors and Other People Ought to Know".

His address was listened to with marked attention, and every word uttered could be plainly heard and understood. Those in attendance were seeking the knowledge that was being given to them and they appreciated the advice which came from the noted physician.

Besides being a learned medical man, Dr. McCormack is a splendid orator, and he knows what the public should know, and he also knows how to give this information so that it will be remembered and will be of use in the future. He said: "In order to show something of my fitness for this task, it may be proper to say that for twenty-nine years I have been a member, and for twenty-four years Secretary of the State Board of Health and Medical Examiner of Kentucky. For twenty-nine years, I have represented my profession before every session of the legislature of Kentucky, and during the same time, with delegates from other states, have often represented it before the National Congress. Once or twice almost every day for five years I have appeared before audiences in some part of this country to talk upon this subject, laymen discussing it freely at the conclusion of my remarks. Going from state to state, until I have now been in nearly all of them, and in many of them from county to county talking over these matters with both physicians and laymen in this heart to heart way, I have been able to make a study of doctors, of what they are doing, and what people think of them and of this reform in a way which has never been possible to any other man before." He then delivered his usual address.

Some time ago Dr. J. N. McCormack spoke before the State Medical Association of Delaware and so impressed the members with his address that they have appointed a committee to induce him to return and make another talk.

Should he consent to come, it was decided last evening to have him address both schools and the professoin in this city in the afternoon and in the evening hold a public meeting.

GEORGIA.

The physicans of Savannah listened for two hours and a half last night to an intensely interesting talk by Dr. J. N. McCormack, a distinguished member of the medical fraternity in the United States.

The address was to have been a public one, but it was found that the local physicians did not have time to arrange for this, and after hearing from Dr. McCormack at night, requested him to try to come back to Savannah in a short time and give his address to a general audience. He will try to do this.

Dr. McCormack said his conception of a physician was that he should be a leader in the community, the cleanest man in it, clean in speech and in morals, a leader of opinion, and the best cultured.

The time is at hand, he maintained, when the doctors are to have a leading part in the destiny of the country. "The early legislation of the United States," he said, "was placed in the hands of lawyers as a rule because the problems were of a nature which could best be met by men in that profession. Now, the problems are social and moral and a different class of men should be sent to the legislatures. In this the doctors must take a hand by impressing on their legislators the worth of the health measures before them and helping to get men in the legislatures who will give proper consideration to these measures."

Dr. McCormack thinks the future of this section is a great one. "With the wonderful climate and soil of this Atlantic and gulf country becoming better known to people in other parts of the country," he says, "the wealth of the North will be poured into this section within the next few years." He advised the physicians to get together and be ready for this development, to organize here, then go out and infect the rest of the State and to make the profession what it ought to be, the greatest factor for the protection of the human race.

The organization of a post-graduate school among physicians here was his chief suggestion. He told of good work being done in other places. In this he eulogized the place of the country practitioner in the history of medicine, showing most of the greatest discoveries in medicine has been by country doctors and for the most part in the South.

Dr. McCormack declared that the State Medical Society is doing less for progress than any state society in the United States and outlined what is being done in other states.

At the end of the address a rising vote was tendered, and Dr. McCormack was urged to come back to Savannah and deliver a public address.

Yesterday afternoon, at the City Hall Council Chamber, Dr. J. N. McCormack's address was one of the most compact, clear-cut, logical efforts ever heard by a professional audience of Athens.

At the Chapel of the University of Georgia in the evening at 8 o'clock Dr. McCormack addressed the citizens generally. Every class of citizen was represented, business men, ladies, officials, educators, students and physicians. His address is printed in full in the morning paper.

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Dr. McCormack's address before the State Medical Association some time ago proved so interesting that the Newcastle County Medical Society decided last night to invite him to address them.

IDAHO.

To a crowd of several hundred men and women at the Bishop Tuttle Church House, Dr. J. N. McCormack delivered a rattling fine lecture on the "Relation of the Physician to the Community and the Community to the Physician." He congratulated the people of Boise on their admirable water system; condemned the practice of turning the sewers into the river for the man below the city to get and spread disease. Dr. McCormack's entire address was printed in the Boise daily papers.

In one of his addresses, speaking of the value of pure food, he paid tribute to Dr. Harvey W. Wiley. He spoke of the opposition he had encountered. "The truth is he was just a country boy, just like most of the other men who have done things. He is the kind who will fight to the last ditch and is the right man for the high place he has attained. All honor to the pure food leader of the Government."

ILLINOIS.

A letter from Cairo, written by Dr. James W. Dunn, Secretary of the Medical Society, reported that in the afternoon of November 30, 1911, at the club room in this city, Dr. McCormack spoke to doctors only. The majority of physicians of this city and county and a large delegation from the surrounding counties and from Missouri and Kentucky were present. This address was delivered in a conversational style, all being grouped about as one large family and was most effective. Their duties and false positions were presented in such a certain, yet kindly way, that it seemed everyone present must make a

self-examination to see in what particular he had been derelict in his duties towards his patients and his profession. From this awakened conscience no doubt will arise, many resolve to be better physcians and better brethren. In the evening, Dr. McCormack delivered his address to the public. He appeared at his best. For nearly two hours he kept his hearers fairly captivated. A listener said he never saw an audience give a lecturer such undivided attention for so long a time before. It is worthy to note that in short addresses at the close of the lecture two Congressmen present announced themselves in favor of a National Department of Health.

Speaking at Murphysboro Dr. McCormack said: "It has become very much the fashion to talk about the conservation of the Nation's resources limiting the terms of Mr. Roosevelt unfortunately did in calling the first convention to the subject of farms, forests, mines, factories and other things having a recognized money value. Now far and away the greatest resource of any Nation is its women, children and men. Unless there is a vigorous, healthy population to develop, operate and enjoy them, all other things called wealth have only an abstract value."

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Dr. McCormack visited all the large places in Illinois and gave his lectures. The daily press was as generous and interested as it was elsewhere and published his addresses in full.

INDIANA.

The Attica Ledger said: "Dr. McCormack, at the invitation of the Fountain County Medical Society, gave one of the most helpful and interesting lectures that was ever delivered in this city. He made a favorable impression from the very start; six feet tall, broad shoulders, full chested, strong limbs, in mere physique he was attractive, but his words were even more; perfectly at ease with a ready suply of words and every word full of meaning he soon gave his auditors to understand this was no mere lecture after the style of cut and dried addresses but that it was vital. It touched every one so closely. At the close there was a round of applause that was a tribute to the speaker and the address.

At Seymour, at Richmond, at North Vernon, and at Madison he gave his talks and addresses. He has been speaking two or three times a day and last Monday made four addresses.

Those who attended the lecture of Dr. J. N. McCormack in Terre Haute expected a lecture full of scientific, medical lore but, instead, they were treated to one of the most entertaining lectures that has been given in Terre Haute in many a day. The clear, forceful manner in which he made them acquainted with facts, touched now and again by clever humor, made the long address seem brief and not a single instant did he lose the attention of the crowd which was largely composed of professional men and their wives.

IOWA.

Speaking at Dodge City, Dr. McCormack said: "Although I am nominally a representative of the American Medical Association I feel that I am accomplishing a more serious work than if I confined my service strictly to that society which meets but annually and then for only a few days. And so it is with the State Medical Societies. They meet four days and are gone for another year. It was this fact and a realization of the conditions brought about by the appalling matter of comparative ignorance of modern methods and the progression of science that first caused me to look into the question and of trying to dispel much of the feeling that exists among the laity today toward the medical profession."

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The Gate City of Keokuk published his address in full. Speaking of patent medicine, Dr. McCormack took a small quanity of a patent medicine widely advertised in a flat dish and lighting it showed the alcohol contained therein produced a flame that spoke of the strongest product of Kentucky Bourbon.

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Dr. McCormack's address at Waterloo throughout was interesting, plain truths being treated in plain terms and much food for reflection being given.

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At an afternoon meeting with the doctors of Waterloo, Dr. McCormack discussed, first, How to Make the Medical Society More Educational to the Members and More Useful to the People; second, How to Elevate the Standard of the Profession and Thereby Increase the Public's Respect for It; third, How Co-operation among the Doctors Will Advance both the Scientific and Business Interests of the Profession; fourth, How to Establish More Friendly and Mutually Beneficial Relations Between the Organized Medical Profession on one hand, and City, County and State Governments on the other, so as to promote the enactment of such sanitary laws as will surround the people with the greatest possible protection to life and health. At the evening meeting these topics: first,

The Relation of the Medical Profession to the Public; second, The Sanitary Questions that Demands Solution by the Profession and the People; third, The Danger to the People from an Unorganized and Underpaid Medical Profession; fourth, The Interest of the Profession and the People are Mutual; fifth, Things About Doctors that Laymen Ought to Know; sixth, The Evils of So-called Secret Remedies and Their Cure.

KANSAS.

At Wellington Dr. McCormack said in his lecture: "Where a man is becoming feeble at the age of 60 or 70 years, with proper care he should merely have reached the prime of life." He advocated the formation of national, state and local health departments and the frequent discussion of preventive measures. It is hoped the people will remember the good points of this fine address.

The concensus of opinion of those who heard Dr. McCormack lecture was that it was a grand, good lesson that should not be neglected.

At Larned, the large audience present listened with the closest attention while Dr. McCormack expounded truths with almost startling vigor and clearness. It seemed lamentable that only one man in these great United States is delegated to work of this kind. The time is ripe, the people are eager to be instructed and we need not one but a thousand Dr. McCormacks to go out with the gospel of Health and preach it in every community.

In Reno County Dr. McCormack spoke in an informal way seating himself before his audience but at the close of his remarks, which lasted for an hour and twenty minutes there was a murmur of approval that meant far more than applause. The eminent physician did not court the favor of his hearers; on the contrary, he declared while the State of Kansas had within her borders many physicians such as Dr. J. Crumbine, Secretary of the State Board of Health, who were accomplishing a great work, the State as a whole, with reference to the work of its Medical Association, has done less than any other state in the Union. "My experience has been that doctors, more than any other class of professional men, are quarrelsome at best. When there is no common association to hold them together they are vicious in their jealousy of each other. With the legal profession this is different. Lawyers touch elbows with one another, use each other's books—sometimes each other's witnesses. The result is that, as a rule, the sun never goes down upon their anger of a sense of personal injury from competition. It is for us to follow their example," said Dr. McCormack.

LOUISIANA.

Dr. Oscar Dowling, Secretary of the State Board of Health, entered most heartily into Dr. McCormack's itinerary of his State, and accompanied him in a tour that, as he announced, would embrace every Congressional District in the State.

Mr. C. C. DeGraffenreid, President of the Louisiana Press Association, addressing the State Medical Society said: "It affords me great pleasure to be in a position to contribute in any manner possible to the success of the meetings which have been arranged for Dr. J. N. McCormack in Louisiana."

His itinerary of the State was printed in full and sent out to the medical profession throughout the State. His tour of Louisiana started March 9, 1908, and closed March 30, 1908.

At Lake Charles, his lecture was a familiar talk and was thus more appreciated than a formal lecture would have been. His main idea was that of getting as much out of life in a proper way as one possibly can. In this connection the health of the body was most particularly gratifying but other matters incidental to our lives were given attention, interspersed here and there with humorous allusions and familiar illustrations.

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The editor of the Monroe News said of his address: "His words simply and discreetly spoken were pregnant with meaning, incontrovertible, indisputable. He asked but a hearing, no flourish of oratory, no play of words, no fine periods but he brought us something better, help and hope.

The Natachitoches Enterprise said: "the doctor talked fully two hours but he is a very interesting and magnetic speaker and he could have held his audience for fully as long again. A child of ten could have followed this excellent discourse as it was couched in the simplest language and no technical terms were used from start to finish, but much valuable information given and many plain truths told that should and will bear fruit."

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Speaking of Dr. McCormack's address in New Orleans, one of the daily papers said: "Part of what he told hearers was familiar to some, much was new and all instructive. His personality, unpedantic style and the almost intimacy which he engendered in his audience as a lecturer, made his discourse un-

usually entertaining. That he was in accord with his audience last night was evidenced by the reception of his remarks. His discourse was particularly enlightening in its statistical features, altruistic in its tenor, uplifting in its aim, filled with bright, humorous passages and witty comment. Those who followed the lecturer with brief addresses were Archbishop Blenk, Rabbi Lleucht, Dr. Beverly Warner and Dr. E. B. Craighead of Tulane. A spontaneous outburst of appreciation marked the end of Dr. McCormack's lecture. Archbishop Blenk said the speaker had so thoroughly wound himself around his heart that he felt like throwing his arms around him and thanking him in the name of New Orleans. He said Dr. McCormack had conferred a distinct boon on the community. "If messages like that of Dr. McCormack's went out frequently to the young men holding before them the spectacle of their own misery, ruin and shame it would be a thousand times better for the world." Turning to the lecturer he expressed the wish that the blessings of New Orleans and Louisiana accompany him.

MARYLAND.

A letter from Dr. Guy Steele, Cumberland: Though the night was stormy and rain descending in torrents our hall was well filled; but for weather conditions an immense crowd would have been turned away. The universal opinion of the public is that the address was of absorbing interest, full of important facts and entertaining, delivered with such eloquence and in such a kindly spirit that much good to the community must develop from it. To the members of my profession and to myself it was a treat and an inspiration. Never before have we heard our personal shortcomings and the glorious opportunities of our profession so plainly and fully demonstrated and at the same time the way to advancement in all that works for the best that is in us so friendly pointed out to the profession. Much good must result from his visit. A committee has been appointed by our County Society to put into execution his proposed course of study.

An editorial comment was: Dr. McCormack spoke for over two hours and gave the people one of the frankest and most honest discussions about things they ought to know they have ever heard. Aside from the fact that he is one of the most prominent medical men that has ever come to this County, he has a simple and impressive eloquence that cause his words to burn convincingly into the reason of his hearers. It was just the greatest thing that our people have ever heard in a medical way. Those who did hear it will remember it to their dying days and those that were not present have missed much. It is difficult to compute its value and the extent of its influence.

The Cumberland Daily News printed his address in full.

Baltimore: Dr. McCormack is stopping at the Hotel Belvedere in this city and makes pilgrimages to the counties. Saturday afternoon, he will deliver an address in the old Senate Chamber in the State House in Annapolis. The same evening, he will be the guest of honor at a dinner to be given at the Maryland Club in Baltimore by Dr. Hugh H. Young. Dr. McCormack is an all-round doctor. His mission is to stimulate the people to the point of doing things for their own protection against disease. We have to thank Dr. McCormack for the extra sheets on pullman ear berths. He started a crusade in Kentucky for the extra sheets in order that they should go between the blankets and the passengers and also made a demand for fresh sheets every day. This was to prevent the conveyance of disease from passenger to passenger. Next Sunday afternoon, he will speak at McCoy Hall, Johns Hopkins University, on Medical Economics and Social Purity.

The Baltimore Sun in an editorial said: Many of Dr. McCormack's utterances had the ring of surprise in them. He said much of the sickness that occurs in this state and throughout the country in the past years and every year was due to diseases which are distinctly and practically preventable. The people and the men in authority in the Government, he declared, were slow in waking up to the fact. Dr. McCormack expressed himself in favor of a National Health Department in Washington with a representative in the Cabinet. He thinks there will be a revolution in the medical profession such as has been seen in the legal profession. Great lawyers now try to avoid litigation and many of them never go into a court room. The Nation should engage the greatest physicians to study means of prevention of diseases. Governor Warfield presided at the meeting and at the close of the address he said he heartily endorsed what he said with regard to the importance and urgency of measures for the prevention of disease. He declared that the address had deeply impressed him.

Some years ago Dr. McCormack toured the country, establishing medieal societies. He is now traveling to aid the societies to carry out the original plans. Recently he spoke at Yale University and in New York City before the Committee of One Hundred. His address was printed in full.

MISSISSIPPI.

On April 14, at 8 o'clock p. m., 1908, at the Baker Grand Opera House, in the City of Natchez, the itinerary of Dr. McCormack in the State of Mississippi was closed. He was greeted by a large, enthusiastic audience, and was interrupted frequently throughout his discourse by demonstrations of approval. In the afternoon, he gave his heart to heart talk to the doctors and in the evening at 8 o'clock he gave his lecture to the people. The general expression on all sides among our people was that never before had they listened to such a great uplifting, soul-stirring lecture. A movement is now on foot in our city looking to improve sanitary conditions through the organization of a City Board of Health. Advice from the cities of Columbus, Meridian, Hattiesburg, Jackson and Vicksburg indicate that the people and the doctors were aroused as never before. Governor Noel presided over the meeting at Jackson and such prominent laymen as Bishop Galloway, Ex-Governor Vardeman and others took part in the discussion. Governor Vardeman promised to lend the influence of his paper to the movement for better and more rational living. Dr. McCormack is a wonderful man. He has the happy faculty of being able to deliver the keenest thrusts and the most scathing rebukes without causing ill feelings. His methods remind me of an old Indian saying: "The Indian scalps his enemies, the pale face skins his friends." Dr. McCormack skins his friends and they enjoy being skinned. He is certainly scalping his enemies.

His work is simply wonderful, and the benefits to follow beyond all calculations.—A letter from Dr. P. M. Rowland of Oxford, Mississippi.

MISSOURI.

Dr. A. H. Madry, writing from Aurora, said: The lecture of Dr. McCormack's was, indeed, a success and a revelation. The people are talking it on the streets and the only regret to be heard comes from those who allowed minor things to keep them away. There was a large, select and highly appreciative audience. The attention given and the response assured me that the audience got the message. The doctor convinced us that our medical schools should teach the conservation of our material interests that we may be sure that no wolf will be at the door while we are pursuing our investigations and administering reliefs. We need this teaching for the rounding out of a medical education instead of devoting so much time for examination. Dr. McCormack advocates this and suggests that I write Dr. Gorgas and express to him the need felt for such teaching.

From Kirksville, the Chairman of Arrangements wrote: Dr. McCormack spoke to a packed audience of a thousand representative people of this section of the State. They were entertained and were enthusiastic over the lecture. He had done the doctors of the county untold good and it will bear fruit. We are all going to keep the good work up.

MINNESOTA.

At Brainerd, The Tribune said: " A large and representative audience greatly enjoyed the address delivered at the Opera House on Monday evening by Dr. J. N. McCormack of Bowling Green, Kentucky. The lecture was given under the auspices of the Upper Mississippi Medical Society which met on Monday.

"Dr. McCormack gave a most interesting and instructive talk on sanitation, and held the attention and interest of every person in the large audience until he closed. People who are considered qualified critics of anything offered to them on the stage or rostrum, listened intently to the Doctor's utterance and when he had closed wished he had spoken longer.

"Dr. McCormack combines ability with sincerity and embellishes his utterances with keen wit and striking humor. He came to preach the gospel of health and life and Brainerd is very fortunate in having the opportunity to hear him."

The Minneapolis Tribune said: "Dr. McCormack has been selected as a field worker. He is one of the ablest speakers among the physicians in the country and is now giving his entire time to lecturing before doctors and laymen and to organizing various societies for the promotion of health.

"In many parts of the country his efforts have met with an enthusiastic response, his visit often being directly followed by the formation of a public health league or some additional post-graduate work being undertaken by the various medical colleges."

Dr. William Mayo, President of the American Medical Association, says of him, "There is no question but that Dr. McCormack's work, next to the Medical Journal, is the most valuable asset which we have in our Association. I am particularly struck with the effects of his address on the general public."

The Daily Journal Press of St. Cloud said in an editorial: "The most potent reason for the success of Dr. McCormack, of Kentucky, as a public lecturer is that he has a message to deliver. Aids to that success are his

ability as a speaker and his entire frankness and high courage. He does not hesitate to rebuke the members of his own profession for their narrowness of spirit which prevents that helpful harmony in a great work, and he does not fear to criticise the newspapers for publishing patent medicine advertisements, or to score the public for their scant support of the press which makes it necessary for the country editor to accept such business to save his paper from bankruptcy.

"Dr. McCormack breathes the spirit of brotherhood, which has for its aim the best good of the people. He says the doctors of each city should work together and he cited Rochester, Minnesota, as a place which had been made a great medical center by the teamwork of the doctors. He told the doctors to quit knocking their fellow-worker, and present a united front for the fight against disease and ignorance.

"Dr. McCormack's audience at Pipestone was made up largely of physicians who were here attending the annual meeting of the Southwestern Minnesota Medical Society. The lecture was of a practical and interesting nature. Dr. McCormack's talk covered a wide scope, touching numerous points of mutual interest to the public and to the physician, bringing out many practical suggestions in the interest of public health. Dr. McCormack is a man of broad experience, is plain and logical, earnest and fearless and has the faculty of holding the closest attention of his hearers. Those who heard him Friday evening were enthusiastic in praise of his address and prominent citizens after the lecture questioned the speaker as to the possibility of returning to Pipestone at a future date, saying that his audience would be as large as the largest hall in the city would accomodate."

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The Winona Republican Herald said: "One of the strongest features of Dr. McCormack's work is the unqualified support and endorsement which it has received from the ministry irrespective of denomination or sect. Many of his meetings have been held in churches and the local clergymen have taken part in the discussions following his lectures. So enthusiastic have they been regarding the value of his work to the public that he has been repeatedly urged to return and to occupy their pulpits on Sunday, the ministers saying that they knew of no better use to which a Sunday evening service could be devoted. Reverend Frederick W. Evans, pastor of the First Presbyterian Church, Steubenville, Ohio, said: "Dr. McCormack is a man with a message which he knows how to deliver. Of these facts he recently convinced an audience of the representative citizens of this city. His knowledge is not only that of a medical expert, but also that of a practical man. He does not theorize about sanitation and hygiene, but deals with hard, cold, irrefutable facts. His statements that conclusively prove such scourges as consumption, and especially typhoid fever, are due almost if not altogether to filth and could be completely wiped out if a conquering warfare were waged against dirt and filth, have not ceased to be talked about and some of his audiences, I know, have taken a more pronounced stand for cleanliness in their homes and city. The citizens of every municipality ought to hear Dr. McCormack. I, for one, bid him God speed in his noble work of enlightening the minds of men on the intensely practical and vital subject of the conversation of the public health."

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The Public Health Committee of Winona was brought into existence as a result of the address of Dr. J. N. McCormack, given in the Central Methodist Church, November 13, 1909. He had been invited here by the associated doctors of Winona and spoke on health and long life.

At Austin, the Austin Daily Herald said: "An audience of a thousand people gathered at the M. E. Church Friday night to hear the lecture delivered by Dr. J. N. McCormack. They came not knowing Dr. McCormack or what he was to say, but they left with a thorough insight of his grand work and character, having heard the best health lecture ever given in the city. People would gladly have paid the usual lecture price to have heard his talk, and many expressed the opinion that his lecture was as good as anything on the Chautauqua program last summer. He has a virile physique for a man of his age, a strong vein of Irish humor and all the chivalry of a Kentucky gentleman. He spoke plainly where his subject needed it to be understood. He chastised both the laity and his profession, usually hard blows with a delicate humor that took the sting out of them. He scattered many seeds of truth that ought to yield a rich harvest in the good health of the community. He spoke fearlessly, exposing many sinful and harmful practices, not in a spirit of criticism, but with the ultimate thought of correction.

"Everyone who heard his lecture has greater respect for doctors, and their calling has been raised to a higher level than ever before.

"As a result of the lecture Austin will have a Public Sanitary League, it being left with the Chairman of the evening to appoint the members of a Committee to take up the work.

After the lecture the visiting doctors and friends were invited to the Commercial Club rooms for an informal reception. Dr. McCormack said many clever things which would have to be heard to be effective."

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From a letter written by Dr. S. H. Gates, Acting Speaker of the House of Representatives, St. Paul, Minnesota, February 10, 1909, to the office of the American Medical Association: "It gives me great pleasure to advise you of the most interesting and instructive talk from Dr. McCormack before a joint session of the Senate and House. The Doctor held his audience for more than an hour.

"Many of the Representatives expressed themselves as having a very different idea of public health matters and of the medical profession in general after his talk. I am sure this address will be a benefit during the present legislative session as far as its influence may bear upon matters pertaining to medical and sanitary problems. I only regret that Dr. McCormack could not have been in the field earlier in the season."

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From a letter written by Honorable A. O. Eberhart, Lieutenant Governor, Senate Chamber, St. Paul, Minnesota, dated February 4, 1909, to the office of the American Medical Association: "Dr. McCormack attended our legislature a short time ago, and gave us one of the most interesting as well as convincing talks on the subject of public health that has been given before the legislature. I was requested to secure him again the next day, but his time was taken up so that it was impossible for him to comply.

"Dr. McCormack is a very pleasing speaker and his subject is of such vital interest to every legislature as to make him exceptionally valuable in assisting to secure legislation along those lines. Every member present expressed himself as highly pleased. I do not hesitate to state that his address will bring important results and I sincerely trust that the time will soon come when his recommendations will secure favorable action at the hands of every legislature in the United States."

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St. Paul, Minn., Jan. 15, 1909.

My Dear Dr. Simmons:

I want to tell you what great pleasure it gave us to have Dr. McCormack with us and what an immense amount of benefit he has produced. The Ramsey County society gave him a warm welcome, and he stimulated it to a new sense of its responsibilities. It will start a class in post-graduate work at once. His public meeting was a splendid affair, the hall being packed to the doors, and not a soul left till he had said his last word. He is a splendid talker, full of interesting facts and with a remarkable epigrammatic manner of expression which strikes home to the listener. I have heard many comments of the most favorable nature from several of our leading citizens who heard him.

His greatest work was done in the legislature. He talked to the Senate and House, the Governor being present, for over an hour. The array of practical medical statistics he gave them was most conclusive, and they are prepared to go the limit on milk inspection, school inspection and the regulation of quackery. For the first time in years we have the legislature with us, and I am certain that we can now secure medical legislation which we have desired for years. I am more encouraged now than ever before over the prospects in our state, and I believe that for years to come we will reap the benefit of Dr. McCormack's visit. He is a true missionary, and is doing, in my opinion, the most valuable work that is being done by the Association.

I write you this from the fullness of my realization of our needs and the firm belief that he is indispensible to the profession. With kindest regards always, I am

Cordially yours,

ARTHUR SWEENEY.

NEW JERSEY.

Dr. J. N. McCormack gives the month of February to New Jersey and expects to visit every county in the State.

Reports from places he has visited speak of him as most gratifying and edifying. It has been said of him: "He is so modern, so well equipped, his qualifications are so numerous, his manner and method so fetching that to hear him is the rarest of treats. He does not indulge in polemics; his sentences mean something. He puts wit into them, emotion and satire, and when necessary, metaphorically speaking spanks both the layman and the doctor—just for their own good.

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The Camden County Medical Society invites the public to hear Dr. McCormack's lecture, saying the talk will be humorous, and historical besides being highly instructive in regard to prevention of ordinary diseases afflicting humanity.

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The doctor advised against reckless use of medicine; believing the American people took too much of it for their own good. The editor remarks: This is true, we have become a medicine swilling people.

One of Dr. McCormack's missions is to inform the ignorant of the possibilities and limitations of medicine, and how to avoid calling the doctor when you do not need him. He says the health of a community depends largely on its information regarding the laws of nature. Epidemics are invariably a product of ignorance. Disease is the result of natural causes. The medical profession has sought out, and is still seeking out these causes. It cannot remove them, but intelligent action of the people will remove many of them.

NEW MEXICO.

The physicians and the press throughout the country were most generous in announcing Dr. McCormack's lectures, and afterwards printing it in full. New Mexico was no exception to the rule as is shown.

Dr. McCormack will speak at Clovis the 5th of November. Invitations have been sent to the heads of families, to shop and mill employees, besides the invitation to the general public. An extra effort is to be made to get the Pecos Valley Association started off right.

On November 7, 1910, Dr. McCormack spoke for almost two hours before a large representative audience at Albuquerque. Dr. McCormack spoke in pleasing manner, a clear good voice, and punctured his lecture with enough wit and humor to hold the earnest attention of his audience. The subject was an important one, and Dr. McCormack said, was of much more importance to the public than to physicians. The lecture was an innovation, and nothing equal to it has ever been heard in Alberquerque. The address was frequently interrupted by applause. The lecture was printed in full in the morning paper.

NEW YORK.

Dr. McCormack talked to the local medical Society in the rooms of the Historical Society on Health Conservation in Albany, the capital of the State. He gave his address in the evening in the Auditorium of the State Normal College, May 19, 1911. His address was printed in full in the daily paper.

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In the address in Buffalo, Dr. McCormack emphasized the necessity of high-thinking and high living by physicians and that a high standard of moral purity should be exacted of men as of women.

Dr. McCormack will address the students of Central High School this morning; at 4 o'clock this afternoon, he will address the medical profession at the Y. M. C. A. Auditorium. At 8:30 this evening the Pathological Section of the Buffalo Academy of Medicine will meet at the Public Library Building to listen to an address by Dr. J. T. Geraghty of the Johns Hopkins Medical School. This meeting will be open for physicians only.

NEBRASKA.

At Beatrice, the morning paper reported that Dr. McCormack knows whereof he speaks for he has wide experience as a practitioner and for five years past has discussed these subjects once or twice a day before audiences in a sort of heart to heart way. He has been examined and prescribed for as a patient by various quack doctors so he was well acquainted with their impositions on the public.

Those who heard the magnificient address of Dr. McCormack at the Larson Theater of Fremont last night are under a lasting debt of gratitude to the Dodge County Medical Society under whose auspices the eloquent Kentuckian came. He is a fascinating and compelling speaker. He talks without frills, enunciating pure English, devoid of polysyllables, technical terms, high-sounding phrases, stilted flights, or other verbage of the modern spell-binder. His address was a clean, plain, sound, sensible, righteous and beautiful treatise of health and sanitation, of doctors and druggists and their relation to the laity. Dr. McCormack's address was anticipated, but it far surpassed the expectations of even the most sanguine, for it contained that which the hired girl as well as her mistress could well understand and from which they could not fail to deduct lasting ;ions and lessons of incalculable benefit. In the same chaste language the speaker treated the prejudices as well as the things which are pleasing to him, and his rapid fire message held the audience in its entirety for more than an hour and a half. Twenty Fremont physicians occupied seats on the platform.

NEW HAMPSHIRE.

The Claremont National Eagle printed his address in full.

It was also printed in the papers in Concord, where he made his address October 11, 1909.

The address was printed in full in the Evening Union of Manchester.

In an editorial of the National Eagle: If the Sullivan County Medical Society never does anything else along a similar line, it should have the lasting gratitude of the public for bringing about the lecture given by Dr. J. N. McCormack. The lecture abounds in truth and the seed sown should be productive of good.

The Woodville News said: Dr. McCormack is a fine speaker of attractive personality and has a message to the American people which ought to be heeded. He held the close attention of his audience for nearly an hour and a half.

OHIO.

An editorial from the Fostoria Times: Dr. McCormack is a man of fine presence and magnetic temperament. He delivered his lecture in a colloquial tone that proved fascinating to his hearers and his evident authority and knowledge made the address one of the memorable ones ever heard in our city.

His address was published in full.

At Springfield Dr. McCormack declared public parks to be the breathing places of a city for its men, women and children, especially the laboring classes. The greatest mortality from contagious diseases is found among the homes of the poorer classes and they, especially, need public parks. All large cities are now taking up the question of parks and sewers. The Western cities of America, being new and learning from the old States, are taking time by the forelock and setting aside spacious, open places before the ground becomes occupied and too expensive to make parks.

The Cincinnati Enquirer said: Governor Harmon presided last night at the Vine Street Congregational Church at a meeting in which Dr. McCormack spoke on "Things about Doctors which Doctors and Other People Ought to Know." Governor Harmon in introducing the speaker of the evening explained his presence on this occasion by saying that some years ago, when he was trying a case in Seco, Kentucky, Dr. McCormack was a witness for the other side, but he was so much impressed with the Doctor's fairness that he has never forgotten it and "again," said Governor Harmon, "when recently I spoke throughout the State, Dr. McCormack constantly crossed my path and drew some of my audience and probably did me a service." With this introduction Dr. McCormack made his address.

An editorial in the morning paper of Tiffin: A better lecture was never given anywhere than that of Dr. McCormack, a splendid physical specimen of manhood himself, in spite of more than a half century of years lived, and possessing a strong personality and the power of magnetism that draws audiences to him irresistibly. Dr. McCormack held his hearers' rapt attention for over an hour. He is a man of international reputation and for twenty-five years has been engaged in getting legislation that will aid the doctors to bring about public good health. He is the author of all the health laws of Kentucky that make that State the banner State of the Union for laws protecting the health of the commonwealth. Kenucky has the best State Board in the country and the best organization of physicians of any other State. Dr. McCormack stated that not one quack doctor could be found in the entire State as their State laws forbade them to practice there. He said that most of them that were driven out of his State came to Ohio where there were no laws against it. He made a passionate appeal against the use of patent medicines.

OKLAHOMA.

Dr. McCormack in his lecture at Muskogee took occasion to commend Senator Owen for the introduction of a bill in Congress providing for the creation of a department of public health. Dr. McCormack urged the necessity for such a department as an aid in the prevention of disease. It was an interesting and instructive lecture throughout.

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At many points in the State, medical societies issued handsome cards of invitation to hear Dr. McCormack's lecture.

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Dr. McCormack, speaking of Senator Owen's bill, said: "The people of this State can write or wire to Washington this very minute and say that something is the matter with your cow, hog or sheep and there will be sent a government expert to Oklahoma City, and you will be flooded with literature.

But you send word to Washington that one of your family is ill, and you want advice, the reply, if any, will be: "The Government has nothing to do with the health of people."

Dr. McCormack said in his address it is more important to prevent disease than to cure it. It is better for the people to observe the laws of health and sanitation, preserve their bodies from contagious and infection than that new cures should be discovered.

OREGON.

"There is a misconception of what Dr. McCormack is doing, however, even by those who are in sympathy with the Association and its work. As the Ohio Medical Journal says, the majority of their officers 'were laboring under the mistaken idea that the meetings were for the purpose of organizing the medical profession, in other words, had the end in view of forming medical societies.' The idea seems to prevail in many quarters that he is organizing county societies, or trying to build up the American Medical Association. But he is doing nothing of the kind except incidentally. Every State except Maine and Virginia, has long since organized on the plan recommended by the American Medical Association. While there are counties in many State in which there is no society, on the whole, every State except the two mentioned, is fairly well organized and society membership is now within the reach of nearly every physician in the country. Dr. McCormack's work is purely altruistic.

"Looking back after even so short an experience it is easy to see that his whole organization movement has been a great epoch-making evolution, which has carried along in its growth and current those who were commonly supposed to be its sponsors and leaders. This seems to be particularly true of the popular phases of Dr. McCormack's work. First in his own State, Kentucky, and later in Pennsylvania, California and elsewhere he found laymen in attendance at what he supposed were strictly medical meetings, and it was neeessary on the spur of the moment, so to modify and simplify his talk, as to adapt it to their comprehension. Later it began to dawn upon him that physicians come so closely into the daily life of all the people that all classes ean be easily interested and brought into active sympathy with everything that concerns scientific, social and material welfare of the profession, if the matters be presented in plain, simple language.

"At first a common meeting for the profession was held in each locality, but the scope of the work broadened rapidly and it soon became a fixed procedure to hold a meeting for the profession in the afternoon and for both the public and the profession in the evening. In common with his colleagues, Dr. McCormack considers the county society the head, centre and foundation of everything. He believes that each society should not only be a post-graduate school for the mutual instruction and benefit of its members in scientific, social and material affairs, but that it should also be a most potent factor in the everyday life of the community. These points are all brought out and fully discussed and illustrated in the heart-to-heart talks at the afternoon meetings.

"At the evening meetings the curious, intimate complex relation to the people of the individual physician and of the profession as a whole are freely discussed. The causes for the popular distrust for physicians, the defective and imperfectly enforced health and medical laws resulting, and the disastrous consequences to the people in the form of domestic pestilence, increasing the sick and death rate in many communities, are made impressive by illustrations drawn from a large personal and official experience. What the profession stands for, its high unselfish aims and purposes, what it has accomplished under great difficulties, what it could accomplish if it could have that confidence and support of the people to which it is entitled, are vividly brought out. The danger to the people from poverty in the profession and their part in practical measures for relief from this evil are frankly discussed and freely appreciated. In a word Dr. McCormack takes the public into his confidence and shows its deep concern in every interest of the profession. He shows up fraud and quackery in their true light, and the patent medicine evil is painted as it deserves. At the conclusion of his talk there is always free discussion by laymen representing the leaders of public opinion, who are ever found in sympathetic accord and ready to pledge cordial assistance in the great reform work which has been proposed."

"President Taft has promised to send a special message to Congress advising the institution of the national health department," said Dr. McCormack while at the Portland this morning.

Senators Chamberlain and Bourne of Oregon have been actively aiding the movement.

"It will mean the co-ordination under one head of all pure food and health departments of the government, all state, county, and city boards of health, all medical organizations, teachers and commercial interests," continued Dr. McCormack.

"The commercial interests will come in because of the realization that conservation of health is the most essential thing in our national prosperity.

"Every year there are in the United States 600,000 premature deaths and 2,000,000 cases of unnecessary illness. The loss to the nation is incalculable. It is caused by failure to coordinate forces already existing. It is caused by inadequacy of educational methods."

Conservation of Health.

Dr. McCormack has been for thirty years Secretary of the Kentucky State Board of

Health. He attended the first conservation congress called by ex-President Roosevelt, and there was impressed by the fact that conservation of trees and soil and water power were emphasized, but not conservation of health. He and Professor Irving Fisher of the American Association for the Advancement of Science, joined in the names of the organizations they represented. Since that time Dr. McCormack has spoken in nearly every county in the United States and has addressed half of the state legislatures.

One of the chief crusades, he said today, has been against quacks.

"I learned with greatest interest," he averred, "of your Portland Society for social hygiene. Let me say that no campaign for social hygiene, social purity, can be successful without the elimination of quack doctors. They together constitute the most damnable institution in all this country. They do more harm. They are all dishonest, all incompetent, all unscrupulous. The manhood of Portland should rise up to put them out. We have put them out in Kentucky.

Defends Dr. Wiley.

Dr. McCormack spoke warmly of Dr. Wiley of the government pure food department. Dr. Wiley, he said, has been persecuted by a systematic organization between manufacturers of patent medicine, adulterated foods and rectified whisky, and they fought him with all the venal power of their millions of capitalization, and that they were defeated is a triumph for national decency, and a protection to health and life.

"Dr. White, Secretary of your State Board of Health, is doing a work recognized all over the United States as immensely important," said Dr. McCormack. "Dr. White is known as one of the most effective among all public health leaders. He is a national force."

"I want to see health organizations, teachers, professional men, commercial interests, and newspapers lined up solidly for the practical conservation of health," concluded Dr. McCormack.

"When this is done the 600,000 premature deaths and 2,000,000 unnecessary cases of sickness annually will stop. Quacks will be eliminated, annihilated, if necessary. Education will be complete and effective. We will have a cleaner and stronger race.

"I don't want the women to stay away from the meeting tomorrow night. I want to speak to the federation of women's clubs, as well as to the business men and doctors. The women must do a large part of the work, anyway, and there is no sense in a division of forces."

Dr. McCormack in an address in Portland said the rapid growth of medical quackery in the West was due to the fact that quacks took advantage of the carelessness of qualified physicians who do not do their work properly and said a systematic fight against this branch of medical fraternity must be started in order that the reputation of good men be upheld. "I have made a careful study of conditions and have found that if every patient got what he or she expected in the way of examination and treatment from the doctor to which they appealed there would not be a sufficient number of doctors to do the work.

"The doctors try to take too much upon themselves and they do not give the individual cases proper attention. Naturally, they do not make the cures and the patient is not benefited and in his extremity he turns to the quack who presents an alluring story in various ways and in that way the legitimate practitioners are robbed of their patrons and the fraternity as a whole is hurt. The doctors sometimes bring quackery into existence by their own neglect.

PENNSYLVANIA.

Dr. McCormack spoke to about four hundred physicians, teachers and laymen in the Association Hall, Williamsport, on Thursday evening. Along with educating the laity Dr. McCormack proposes to improve the doctors.

In Dr. McCormack's talk at Franklin he did not spare his profession but told the unvarnished condition which existed to too great an extent, and said above all others the doctors should work in perfect harmony one with the other. There is no profession that is more charitably disposed toward the afflicted and sorrowing and none, perhaps, more jealous of the success of his professional brethren. It is not peculiar to this locality but in the case everywhere. This pulling apart in the profession has hindered good work all along the line. Dr. McCormack points out these things very clearly in his lecture. If the visit of Dr. McCormack to our town has done nothing else it certainly set our people to thinking how derelict we have all been.

In Dr. McCormack's interesting, instructive and highly entertaining lecture last night in the Lyric Theater he deplored the fact that this city had no Meat Inspector. He said as a matter of self preservation every city should exercise a strict supervision over all its abattoirs, slaughter houses, meat markets, etc. He said: "The Jews are protected from the terrible result of diseased meats

by the tenets of their religion and hygienic laws and meat rejected by the rabbis as unfit and unclean is sold to the Gentiles.'' The lecture did one thing, it set everyone to thinking and certainly so far as they are concerned they will exercise all the care possible to guard their own tables.

Dr. McCormack is a man of commanding presence and in a short time his quaint wit and genial personality completely won his large audience at Washington. The greatest interest was manifested in the address not only by the physicians present but by the general public. Dr. McCormack's wide experience from which he drew many amazing pictures make him eminently fitted for the work he is carrying on, and the genial and earnest manner in which he presents his subject arouses the interest of his hearers to the highest degree of enthusiasm. At many points in his lecture he was vigorously applauded.

Last evening the Board of Trade Auditorium of Harrisburg was filled to the doors with physicians and others from all walks of life, not only from this city but from nearby towns as well, to hear Dr. J. N. McCormack deliver his lecture on ''The Relation of the Physician to the Public.'' Dr. McCormack's lecture was wide in its scope, showed deep research and familiarity that made it as entertaining as it was instructive. It was easily understood by all who heard it.

No orator ever spoke more effectively and impressively to his audience than did Dr. J. N. McCormack last night at Carnegie Music Hall. The audience was intensely interested. It filled the great hall and remainded throughout the address, increasing in enthusiastic applause as the time passed.

Dr. J. B. McAllister gave a dinner at the Senate last night in honor of Dr. J. N. McCormack, the distinguished physician and surgeon of Kentucky. It was a delightful incident during the Doctor's visit here and the guests were charmed with his stories of Kentucky life and his keen wit. He declared that the impressions in the North of the feuds and political rivalries in his State are not clear and that there is much misunderstanding regarding the causes and the attitude of the people regarding them.

TENNESSEE.

Dr. McCormack addressed the General Assembly sitting in Nashville, January 25, 1907. Accepting the invitation to speak in the Senate Chamber he began his lecture at 3 o'clock in the afternoon. The address was made in an hour and twenty minutes. He was repeatedly applauded as he drove home some telling truths.

* * *

Dr. McCormack delivered his address in all the important places in Tennessee, doctors and people vieing with each other in expressing their appreciation of his beneficial message.

UTAH.

Dr. McCormack lectured in Utah in October, 1911.He delivered his lecture in Salt Lake City, and in Ogden. He often spoke of the audience in Ogden. It was largely composed of women, accompanied by one or more babies, who slumbered in the mother's lap while she took notes of the lecture with her note book, supported on the body of the child. Telephone messages had summoned women from the surrounding country, and they proved among the most interested of any he ever addressed.

Dr. McCormack and his wife were entertained at the country club by two cultivated, interesting ladies that would have graced any family circle, and it was hard for them to believe when told later they were plural wives.

TEXAS.

Arrangements are being made by the El Paso County Medical Society for the health lecture of Dr. McCormack, on Thanksgiving night. The date is not definite as officers of the A. M. A. find it impossible to locate Dr. McCormack. But it is thought this night will be agreeable to him.

* * *

Dr. J. N. McCormack spoke last night, November 25, for nearly two hours on Better Health, Better Drugs, Better Food, Better Doctors. The vast crowd listened with intense interest, sometimes breaking into applause at the well directed shots fired at certain rampant evils in the United States.

* * *

Dr. McCormack described himself as an ordinary country doctor. He has been engaged in this work twelve years. He has spoken in every State in the Union and in nearly every county in every State. He is known far and wide as the doctor who can make a speech, and the manner in which he handled his subject last night fully justifies the statement. At the close he thanked Dr. Bulgin, the evangelist for allowing him to occupy the platform at his meeting.

* * *

There have been no addresses made in Houston, in the opinion of The Chronicle which

were more needed, and which contained more sound, sensible advice and instruction than those delivered by Dr. McCormack.

His address, or rather plain practical talk, given at the Y. M. C. A. Sunday evening, strong by reason of its marvelous clearness and simplicity, was such a message as needs to be told to young and old manhood alike. Dr. McCormack could make the same talk before any woman's society, or high school, without giving offense to any right minded boy, girl, man or woman.

He dealt with the question as one which relates more to the future than to the present. He spoke of the divine declaration, "I will visit the sins of the father upon the children, even unto the third and fourth generation," the truth of that deliverance is proved every day in the practice of reputable physicians. He pointed out it is not the large visible easily reached enemies of health which are most to be dreaded, but such as mosquitoes, fleas and flies. The three young doctors who gave up their lives to prove the mosquito was the agency that transmitted yellow fever, lie unhonored in unmarked graves, because we build monuments to those who destroy life, not to those who save it; yet these men made clear that which stamped out one of the scourges of humanity.

* * *

Dr. McCormack said at Forth Worth that the time might come when Texas might be as thickly populated as China and that it behooved the present generation to look after the water supply, looking after the purification of streams of water, seeing that sewage was disposed of by cremation or any other means than turning it into their water supply. If hauled to the farms it would largely do away with the necessity of expensive fertilizers.

VIRGINIA.

Dr. Payne, of Staunton, writing to Doctor Williams: "In reply to your request to let you know something in reference to what the people thought of Dr. McCormack's lecture, I can only make one reply. The universal opinion here is 'magnificient.' Hundreds of people have spoken to me, and said, 'I wish he could be here every week. Will he come back?' We are on foot to organize a league. The doctors are even more pleased than the laymen if that be possible. At night, Dr. McCormack spoke to the public in our Opera House, filled to its limit, hundreds (no exaggeration) being turned off. The lecture was superb. The entire audience listened to a two hour address, not a soul leaving. A universal endorsement has been given the address since. One man said he honestly had sympathy for the man who did not hear it."

Writing to the Chicago office of the American Medical Association, Dr. Ennion Williams said: "The tour of Dr. J. N. McCormack to ten of the principal cities of Virginia during the past month was eminently successful and far surpassed our expectations of what would be accomplished by his coming. In every city that Dr. McCormack visited he was received by large audiences and made a profound impression upon his hearers. His trip has already resulted in great good in several directions, and will result in much more. The local physicians could not hear Dr. McCormack without wishing for a better feeling among themselves, a more exalted tone within the profession and more scientific study and practice. Furthermore, Dr. McCormack's visit has greatly increased interest in public health matters and in the improvement of local conditions in the cities visited by him."

Dr. Roy Flannagan writing from Charlottsville, to Dr. Ennion Williams: "I have never heard a lecture which was calculated to do more good to a community than that delivered by Dr. McCormack. The enthusiasm stirred among those that were present indicates that all who heard him are of the same mind."

Dr. V. V. Anderson, Lynchburg, writing to Dr. Williams: "I have heard nothing but universal praise and thanks for the entire profession, numbers of the men hearing him at his evening address that did not hear him in the afternoon. One of our leading physicians just remarked to me that he felt the profession deserved to be congratulated on securing the one man who is doing more to wipe out disease and elevate the standards in the medical profession than any other physician in America. As a result of his talk the local society is seriously considering a home and medical library, and plans are being laid to take up post-graduate work. I can safely say that never before in the history of the local profession has so much interest been taken in medical organization and society work. Numbers of leading laymen have remarked to me, "What a pity more could not have heard Dr. McCormack." The value of his trip to our city simply cannot be estimated, reaching into many fields and benefitting so many classes, his address will ever be remembered as one of the greatest privileges the City of Lynchburg has been fortunate enough to receive for her citizens. We hope that for many years Dr. McCormack will be spared to continue his great education and philanthropic work."

An editorial in the Charlottesville paper: "The speech of Dr. J. N. McCormack last night at the Midway School was, in my judgment, a great address and epoch making in its effect upon its audience. His understanding of his subject was full and clear, his delivery was easy and fearless and it was evident in his utterance that the man is noble in heart and has high ideals of human life. I wish that every man and woman in Charlottsville might have heard this thrilling address. Those who did hear him were stirred and I am writing these lines to appeal to all the citizens of our city and county to fall in line with the movement now on to use the best results of medical science for the prevention of disease among our people."

VERMONT.

Dr. McCormack made an address on Health and Long Life at the Kellogg Hubbard Library in Montpelier, October 1, 1909. Not a man, woman or child who attended and heard the lecture which lasted for an hour and a half, regretted for a moment having been there. He came here with a message which he has delivered in every State in the Union; his style was clear, logical, with a pleasing stage presence, two factors which aid him to strike deep down into people's minds and stir up therein a veritable revolution of the mistaken ideas concerning the medical profession. His address was printed in full in the Montpelier Morning Journal.

At. St. Albans, the Morning Messenger said: Dr. McCormack has an easy platform presence, a pleasant personality, and talked with and to his audience with no affectation of rhetorical effect and no mincing of plain words about unpleasant truths when plain words were the only ones that would tell the story. He was listened to with interest and concern by an intelligent audience and the evening was declared to be one of the most practical and improving of any that has occurred in this community for a long time. His address was printed in full and the editor expressed regret that many persons who would have been interested and benefited by the lecture were absent but "it is hoped they will read every word of the printed lecture."

The editor of the Burlington Free Press said: "Those who stayed at home or went to see the moving pictures last night made a mistake. The address of Dr. McCormack was one of the most interesting and important that has ever been delivered in this city. It would be a dull person who did not take away something from Dr. McCormack's lecture. He is evidently a clean, big-hearted man, who is thoroughly absorbed in the work of helping his fellowmen to better and happier lives. Not only do his words give that impression but his personality also. It can't be any fun for him to constanly harp upon the same subject to a mostly devil-may-care world, but he does it and does it well. Whatever his reward, he deserves more than he gets."

WASHINGTON.

Dr. McCormack spoke before a large and attractive audience in the Keylor Grand Theater last night in Wallawalla. Nearly all the members of the Medical Association were present. The lecture abounded in truths and representative men and women were in the audience, many of them fathers and mothers, who, of all people, should be able to comprehend and coincide with what he said. Dr. McCormack is well termed a modern crusader. The address was frequently interrupted with applause and laughter for he occasionally disclosed a humorous vein. No more important subject was ever presented to a Wallawalla audience.

He addressed a large audience in Tacoma and in Seattle and his lecture was printed in the leading papers in larger cities and towns throughout the State.

WISCONSIN.

At Eauclaire, Dr. McCormack spoke for more than two hours. He held his audience in the closest attention. At the close of his address Father Dunne spoke on health conditions and concluded by reading a tribute to the doctors written two hundred years before the Christian era and taken from the Bible. Dr. McCormack's address was printed in full in The Evening Wisconsin.

For the first time in any of the States Dr. McCormack visited, his address was printed in German as well as English in the daily papers in Wisconsin and Michigan.

The keynote of Dr. McCormack's address to the doctors of Appleton in his two-hour talk to them was the idea of the medical profession acting in a spirit of co-operation instead of in a spirit of competition, which had been the rule for ages.

The Evening Wisconsin, Wisconsin's leading newspaper, had the following editorial:

Health Conservation.

Not alone physicians, teachers and clergyme, but all thoughtful and progressive citizens who appreciate the really vital needs of our day should rally in behalf of the organization proposed and explained by Dr. J. N. McCormack.

Of the great movement, inaugurated by Theodore Roosevelt, which aims at the conservation of our natural resources, no phase is more important than that which relates to the conservation of the public health, both physical and moral.

The American Health League, represented by Dr. McCormack, seeks to combat this tendency, to arouse and educate the public to an appreciation of the fact that health is, after all, the nation's greatest asset.

Deeply impressed by this fact, President Taft will, in his message, recommend the establishment of a federal bureau of health, and this, as we commented the other day, will do much to co-ordinate, to give impetus and direction to all the various forces that are today engaged in the warfare upon disease.

But, of course, no federal bureau can arouse or educate either a state or a community to a full realization of the urgency of the situation; this can only result from such activity as proposed by Dr. McCormack, the organization of the leading thinkers and workers of a community as a part of the American Health League with the object of working up and informing the public on the vital necessity of safeguarding health and securing their co-operation in the valiant efforts of the various medical societies, county or state, to stem the harvest of preventable infection and disease.

And let us say at once, that in our opinion, the greatest work will be to enlighten the people on the horrible and ever-increasing ravages, both physical and moral, of the black plague, and to break down the prejudice against the one possible weapon, outside of religion, that can be used against it—education as to the nature, cause and blight of all venereal disease and insistence on a single moral standard.

Eminent physicians and students of social conditions the world over have come to recognize the utter futility of attempting to inhibit the social evil and is harvest of disease and death by any other means. It's more flagrant manifestations and practices may be regulated, that is all.

A committee of the state medical society and several well known educational and social workers are already engaged in this labor of enlightenment, but their efforts are naturally limited and confined largely to those who seek information. An organization of the character, scope and purpose suggested by Dr. McCormack would lend an authority and give an extension to this missionary work obtainable through no other means.

RESOLUTIONS.

From the hundreds of resolutions that came in from not only Kentucky but almost every state in the Union, these have been selected as showing the character of impression his life had made.

Kentucky Valley Medical Association.

The members of the Kentucky Valley Medical Association have learned with profound sorrow of the death on May 4, 1922, at his home in Louisville, Kentucky, of Dr. Joseph Nathaniel McCormack.

His death after an illness of a very few days, worked a fitting close to a beautiful life. He was permitted to serve his fellowmen, not only of his own state, but of the Nation and of the world, as few men of our time have been permitted to serve. He was a faithful friend, wise counsellor, a constructive legislator, and a valiant champion of the cause of right and of righteousness.

His achievements have been recorded in the annals of the American Medical Association, which as we know it today is the result very largely of his energy, his foresight and his magnetic influence over men. He has left an enduring monument to his memory in the hearts of those who knew him best, and in the health laws of our State, which serve as a model for the rest of the United States.

His life, more than that of most men, was devoted to unselfish service of others, and by reason of his rich endowment of mind and heart, and a truly remarkable personality he was conspicuously successful in what he planned to accomplish.

He had a vision of a great National Health Department with a cabinet member at its head, and had he been spared but a little while longer it is not too much to say that he might have seen the fruition of his labors in the establishment of such a department.

He was the sworn enemy of disease and as the executive officer of the Kentucky State Board of Health for more than forty years he waged an unrelenting warfare against yellow fever, small pox, tuberculosis, typhoid fever, and all the preventable diseases which caused such a large percentage of the total morbidity and mortality in our State.

He was the sworn enemy of inefficiency and lack of preparation on the part of licensed physicians, and of all forms of misrepresentation, quackery and unworthy practice whether within or without the profession. He was courageous and unflinching in the performance of his duty and knew no compromise with error.

A fitting epitaph might be in the words which Robert Louis Stevenson penned for his own tomb—

"Under the wide and stormy sky
Dig the grave and let me lie,
Gladly I lived and gladly I die,
And I lay me down with a will.

In token of our appreciation of his life and work among us, we the members of the Kentucky Valley Medical Association, hereby resolve that a copy of this resolution be spread upon the minutes of this society and that a copy be sent to his widow, Mrs. J. N. McCormack, and that a copy be given to the press.

We, the members of the Kentucky Valley Medical Association, assembled in convention in Berea, being familiar with and appreciative of the work which has been so nobly undertaken and so unselfishly and successfully executed by our departed brother, Dr. J. N. McCormack, realizing that none is so capable of carrying on this work as his devoted son, our beloved friend, Dr. A. T. McCormack, do now pledge to him our fullest support and heartiest co-operation in carrying on that work as successor to his father.

Perry County Medical Society.

At a meeting of the Perry County Medical Society in grateful memory of his services to mankind and sorrow and regret at the death of Dr. J. N. McCormack, the following resolutions were adopted:

Whereas: Our Heavenly Father, the Giver of Life, in His infinite wisdom has seen fit to call to Himself, His servant, Dr. J. N. McCormack be it

Resolved: That humanity has lost a true benefactor, one who served his day and generation by the promoting of public health work in such a way as not only to win him gratitude and fame in his own State, but in various parts of the world.

Resolved: That the medical profession has lost a beloved father, whose counsel and advice was sought far and wide; who made the object of his life service to humanity and the advancement of medical education; who was one of the greatest organizers of men of his profession.

"He never forgot to wear a smile
Though his days were full of care,
It glowed from his soul a beacon light
To those in deep despair.

He never forgot the kindly word
To those who had never known,
The warmth of a word of cheery hope
Spoken in a friendly tone.

He never forgot to give his hand
To the stranger from afar,
He spoke a word of welcome
And left his gate ajar.

He never forgot that courtesy
Spreads like the seeds that's sown,
It found in his soul a resting place
The reward was all his own."

J. D. GRANT, President.
M. E. THREKELD, Secretary.

Southwestern Kentucky Medical Association.

The following resolution was adopted yesterday by the Southwestern Kentucky Medical Association at its closing session in the City Hall, Paducah.

Dr. J. N. McCormack was an honorary member of the Southwestern Kentucky Medical Society. We have had many great men as members and honorary members, but we consider Dr. McCormack one of the greatest men who has ever honored our association's roll.

Dr. McCormack was one of the greatest organizers the world ever saw, and he spent his whole life in organizing the medical profession upon a high plane of honor but he taught and enlightened the people to a degree never before attained by any medical leader. He was truly a philanthropist and an incessant worker for the betterment of the world; and his great work never ceased until the last moment of his life. He actually died at his post of duty, and his spirit no doubt was wafted on wings of angels to bright climes of celestial glory, there to remain throughout eternity.

Therefore be it Resolved: That the medical profession has lost one of the greatest members, and the world a valued friend; that the people not only of Kentucky but of every state in the Union have lost one of the greatest benefactors who ever lived; that his family has lost a noble and kind husband and father, to whom we extend our heart-felt sympathy in their great distress, and whom we would console with the thought that he died in a ripe old age, full of honor and fame, and that he now rests from his sublime labors in celestial bliss.

That a copy of these resolutions be recorded in the minutes of the Southwestern Kentucky Medical Association, and that copies be sent to the State Medical Journal of Kentucky, the Southern Medical Journal, and the Journal of the American Medical Association.

W. G. KINSOLVING,
P. H. STEWART,
ROBERT OVERBY.

Resolutions of the Council.

WHEREAS: In the ministrations of a Divine Providence, the earthly career of our noble friend and fellow physician, the lamented Dr. J. N. McCormack, of Louisville, Kentucky, has been closed and his matchless spirit called to its eternal rewards; and

WHEREAS: By a life of untiring devotion and unselfish service to the medical profession and suffering humanity our friend and brother has distinguished himself as "An Apostle of Public Health," whose achievements, through grim determination and unfaltering devotion to duty, will stand as a monument to his memory more beautiful than the handiwork of sculpture or art, more enduring than pilasters of granite or stone; and

WHEREAS: The medical profession of our State and Nation owes a lasting debt of gratitude to this eminent physician for having erected the Kentucky State Board of Health and brought this organization to its present high degree of honor and efficiency, through which agency and the untiring efforts of its founder the public health of our State has been raised to a standard of excellence hitherto unattained, and comparable to that of any State in the Union; and

WHEREAS: It is our high privilege to render honor to our deceased comrade and friend as one of the leading spirits in the re-organization of the Kentucky State Medical Society, for his eminent service as a legislator, and for his manly, exemplary life both at home and abroad; and

WHEREAS: Our fellow physician, through his superb intellect and unfailing energy, crowned the milestones of his life with accomplishments of inestimable value to his State and Nation and achieved well merited fame as a leading advocate of sanitation and attained preeminence among the most renowned authorities on public health throughout the world;

THEREFORE, BE IT RESOLVED: That we, the members of the Kentucky State Medical Association, take worthy pride in rendering tribute to the memory of our illustrious citizen and fellow physician, Dr. J. N. McCormack, and that we honor him for his life of service and unselfish devotion to the highest ideals, and that we extend to his family and a multitude of friends throughout the State and Nation our sincerest sympathy for the loss of one whose departure leaves a vacant place and silent a voice until now unstilled in behalf of the betterment of humanity; and

BE IT FURTHER RESOLVED: That a copy of these resolutions be furnished the family of the deceased, a copy to the press, and that the same be spread on the records of this organization.

This the twentieth day of September, 1922.

Committee on Resolutions:
W. W. RICHMOND, Chairman,
C. J. AUD,
J. W. KINCAID.

AMERICAN MEDICAL ASSOCIATION, HOUSE OF DELEGATES, ST. LOUIS, MAY, 1922.

Report of Special Committee to Draft Resolutions on Death of Dr. J. N. McCormack.

Dr. Joseph Nathaniel McCormack of Louisville, Ky., died at his home in that city, May 4, 1922. He had reached the age of 75 years. He was a man of ceaseless activity, and died in the harness. He was for many years devoted to the aims and purposes of the American Medical Association, and was an indefatigable worker. His most conspicuous constructive labors in the Association were as Chairman of the Committee on Re-organization, to which committee the medical profession of America is indebted for the present complete organization and achievements of the Association.

The work of re-organization carried him into every state, from the lakes to the gulf and from the Atlantic to the Pacific, and has no parallel in the perfection of its results.

Dr. McCormack formulated and established a model law for the protection of the health and welfare of the people of his native State of Kentucky. Moreover, as its executive, he secured the enforcement of these laws, and perfected an organization in every county. For forty years he gave his time and labor by day and by night to protecting the people from disease, and promoting the organization and efficiency of the medical profession. His vision was clear, his ability was great, his ideals were high, and he accomplished a full lifetime of achievement.

He died full of years and of honors. His work remains, and will go on in increasing circles in the years to come.

E. ELIOT HARRIS, Chairman,
HOLMAN TAYLOR,
D. E. SULLIVAN,
L. S. McMURTRY.

RESOLUTIONS OF THE EMPLOYES OF THE STATE BOARD OF HEALTH.

Desiring to express in the feebleness of words the deep love and affection in which Dr. J. N. McCormack was held, the employes of the State Board of Health, in meeting assembled May 20, 1922, unanimously subscribed to the following testimonial:

We bow in humble reverence in memory of him who has passed from our midst, a kindly friend, a wise counselor, courteous associate, and the embodiment of all that is exemplary in personal habits and gentle mien. Recognizing his influence upon the people of Kentucky in his life of sacrifice and of noble service on behalf of a suffering and, in his own words, too frequently an unnecessarily afflicted humanity, we express our hope that this great life will continue to bear fruit through the work and service of those who have become his followers in the field of public health.

As respects the staff of this organization, who looked to him for counsel, we acknowledge an influence on our lives that shall last throughout all time.

Imbued with an all absorbing interest in humankind, he counted it a pleasure to listen to our problems, whether pertaining to our work, or of a personal nature, and out of his wonderful wisdom and vast storehouse of experience offered those words of advice and helpfulness that made one feel able to cope with any situation that might arise. Simple in his tastes, and frugal in his desires, he exemplified in his life a great lesson that he was ever wont to teach, "the nobility of work," recognizing the fact that the greatest joy and blessing come from conscientious service.

Feeling the highest honor we can pay his memory is to contribute our best efforts to carrying forward the great work for humanity, to which he devoted his life, we are constrained to unite our voices in the follwing resolutions:

BE IT RESOLVED: That, as a small tribute to him whom we loved and mourn, we hereby separately and unitedly pledge our loyal and unstinted support to the State Board of Health, its President and members, and, especially, to his faithful son, our leader and guide, we continue to express our affection and confidence, and offer a full measure of effort in helping him maintain and perpetuate that high standard of public service, expressed in the life of his father.

To the devoted wife and other loved ones, we would extend our sincerest sympathy and offer our services whenever opportunity arises.

Jefferson County Medical Society.

The following resolutions relating to the death of Dr. Joseph Nathaniel McCormack were adopted by the Jefferson County Medical Society.

The death of Dr. Joseph Nathaniel McCormack on May 4, 1922, at his residence in this city (Louisville), is a great loss to the medical profession and people of Kentucky, and of the Nation; this loss is most acutely felt here in his home city.

Dr. McCormack was a man of untiring zeal and inspiring enthusiasm. He devoted his long life unremittingly to the advancement of the profession and the welfare of the people. Although his native state was the field of his greatest activity, his labors extended into all the states of the Union. He formulated and established a model law for the protection of the people of Kentucky from disease and charlatanry, and his vigilance and energy secured its enforcement. He possessed the genius of organization, and the medical profession was the object of his untiring service.

This society hereby records the high esteem in which Dr. McCormack was held, its appreciation of his great achievements, and its profound sorrow at his death. This expression of the society will be recorded in the minutes, and a copy sent to the breaved family.

Committee—J. GARLAND SHERRILL,
L. S. McMURTRY,
LOUIS FRANK.

Shelby County Medical Society.

The Grim Reaper has thrust his sickle into our profession, and gathered into the garner of the great beyond, a noble member of our profession, Dr. J. N. McCormack, of Louisville.

Whereas: It is the sincere expression of the Shelby County Medical Society and its members individually, that the medical profession has lost a valuable member, that the physicians of the State have sustained a loss that cannot easily be replaced in the passing of a physician and worker for the profession at large, a man of more than ordinary ability; a medical counsellor, whose advice was appreciated by all, the laity and profession,

Therefore be it Resolved: That (1) in the selection of a successor to Dr. J. N. McCormack, we heartily endorse the selection of such a capable man as his son, Dr. A. T. McCormack: (2) That we promise our support and co-operation in continuing this well founded work, that it may attain the highest point of efficiency due the dignity of its leader.

(3) Realizing the great benefits derived in the past by co-operating with the State Board of Health, we furthermore pledge our time and influence in improving living conditions in our county.

HARMON NASH,
W. P. FOREMAN,
T. E. BLAND.

The Shelby County Medical Society notes with the most profound regret the passing away of a physician of more than ordinary ability, in the loss of Dr. J. N. McCormack of Louisville, Ky.

Whereas: In view of his long and honorable career, as a member of the medical profession of Kentucky, who has brought to it honors of the highest rank, not only to the County and State, but to the Nation as well, and recognizing his ability, his professional loyalty, especially to the members of the County Societies, his devotion to duty, to matters pertaining to our profession and that in appreciation of these noble qualities, and of the high esteem in which he was held by the Shelby County

Resolved: That in the death of Dr. J. N. McCormack the County, the State and National Medical Societies and Associations have lost one of the most valued members

That we mourn his loss as a physician, while cut down in active work for the cause of science and humanity.

That we share with the family a common and sincere sorrow in his death.

That these resolutions be spread upon the minutes of the society records, and a copy be furnished the Kentucky State Merical Journal.

That while we mourn the loss of a professional brother, we would bow in deep humility and reverence to the mandate of Him, whose every act is just and right.

Committee—GRAHAM LAWRENCE,
LOWRY BEARD,
W. P. HUGHES.

Daviess County Medical Society.

At the regular quarterly meeting of the Daviess County Medical Society held in Owensboro on the 19th of September, 1922, the following memorial and resolutions were unanimously adopted:

A note of sadness guides our pen when we refer to the passing of Dr. J. N. McCormack, a physician who had extended friendly greetings and had shaken the hands of more doctors than, perhaps, any other physician of his generation. He spent his useful and unselfish life going about among the people, not only of his native State, but nearly every State in the Union, as well, teaching them how to protect themselves from the ravages of disease and to guard them against the insidious assaults of death.

No memorial, however, eloquent, no resolutions however laudatory can add anything to his renown, for in very truth the exalted place the name of Dr. J. N. McCormack will ever occupy in the history of the Medical profession depends on his own life work and great achievements, and not on posthumous fame. He has left imperishable records of worth and usefulness as friends and physicians, honored and beloved by all who knew him. The annals of Kentucky Medicine contain no name more distinguished than that of Dr. J. N. McCormack.

In the early twilight of the twentieth century a movement was put in motion under the guiding hand of Dr. J. N. McCormack which soon resulted in a harmonious organization of the entire medical profession of the United States for the purpose of elevating the science of medicine wherever practiced and for the benefit of the afflicted wherever found. He made an uncompromising fight against all forms of Charlantry and soon Kentucky was freed from medical quackery of every kind, in fact we think it is true that every law regulating medical practice on the Statute Books of Kentucky today, was inspired and advocated by him.

He so ably edited the History of the Pioneer Doctors of Kentucky that it placed him in the forefront of the medical writers of his day. Dr. McCormack's life work in the medical profession will make his name and fame more enduring than the marble and granite that shall mark his last resting place, because the waves of time will destroy the one—the other is immortal.

It is true that the record he left behind when he passed to join the "Dusty Championship" of kindred and friends who had gone on before, will require the services of no "old mortality" to retrace his achievements on his crumbling gravestones, for they will for all future time continue to live in the grateful memory of all those whose health and happiness it was his to promote.

Therefore Resolved: The Medical profession of Daviess County heard with profound regret of the death of Dr. J. N. McCormack and we hasten to express our great sorrow in his loss.

Dr. McCormack served the profession and the people of Kentucky unselfishly for forty years and was the greatest uplifting influence the profession had during that period. His efforts in behalf of the profession were always unbiased, in that the people as well as the profession were protected. His reputation was built upon the solid foundation of merit and conscientious service, and was national in its scope.

Our sympathy is with his family whose loss like the profession, is beyond estimate; Therefore, be it resolved:

That the profession of Kentucky has lost its greatest leader and the people their greatest defender against disease, and that a copy of these resolutions be spread upon the minutes and a copy be sent the family.

W. L. TYLER, Chairman.
J. W. ELLIS,
S. J. HARRIS.

Logan County Medical Society.

Every fascinating chapter in history centers about the deeds of masterful men and charming women. In the daily affairs of every community attention and interest are always focused upon its effective citizen—upon the forceful men who bring results.

A man's greatness cannot be measured by the surveyor's chain or expressed in terms of altitude above the level of the sea. In the memory of his friends and in the love of those that knew him best is his true greatness measured. Who are the present day leaders in science and the arts, in commerce and invention, in good government and social service, now creating a better civilization for the future? One of the chief actors in the mighty drama of world development has played his part; has crossed over the river; and is resting in the shade on the other side. The services rendered to the people of this commonwealth, aye! to the people of these United States. The service rendered to the profession he adored and loved will go on and on until the happy day is reached when professional jealousy shall be no more and efficiency shall be at the maximum. Death's arrow has found a shining mark in the person of Dr. Joseph N. McCormack and we bow our heads in sorrow and try to bear our loss as become true men.

And Whereas: The Omnipotent has seen fit in his infinite wisdom to remove from his earthly environments and duties our friend and co-laborer, Dr. Joseph N. McCormack; therefore be it

Resolved: That we give expression to our feelings of regret and loss on account of his death.

Resolved: That we considered him an ornament to our profession and a credit to our country; a true Kentucky gentleman, measuring up to the highest standards of good citizenship.

Resolved: That in the going hence of Dr. McCormack to broader and greater fields we feel sure the times in which he lived and served has sustained a loss that will be keenly felt.

Resolved: That we tender in these resolutions our sincere and deepest sympathy to his family.

Resolved: That a copy of these resolutions be spread upon the minute book of our Society and that a copy be sent to Dr. R. C. McChord and Dr. A. T. McCormack.

Committee—WALTER BYRNE,
J. K. W. PIPER,
W. R. BURR,
PAUL BEAUCHAMP.

Campbell-Kenton County Medical Society.

In the death of Dr. J. N. McCormack, the Campbell-Kenton County Medical Society deplores the departure of one who though full of years and of honors, was still the greatest leader of medicine in the State and among the greatest in the profession.

Like Moses his eye was not dim and his natural strength was not abated for he had to the last a clear vision of the professional outlook and a strong and active mind energetically devoted to achieving high ideals of professional service and advancement.

He unquestionably did more for the unification of the medical profession of the Nation than any other, and this he did not from any motive of professional advantage but in order that a united profession might be freed from the internal strife and jealousy of schools, isms and classes to devote itself with singleness of purpose to the great problems of professional advancement and public health. He carried the idea of medical unity and harmony for the good of the doctors and the welfare of the people from the national headquarters to every State medical society, to hundreds of county societies and to thousands of individual physicians as a personal message. This message he delivered with the compelling force of his clear conception of its truth, the inspiring energy of its fine idealism and the persuasive power of his great love of our science, our profession, and our people.

We rejoice that his long and energetic life accomplished so much and that he lived to witness the success of his labors. As Kentucky physicians we are proud of him and his great work and that we were as individuals privileged to know him and call him "friend" and we acknowledge the deep obligation his life among us lays upon us to carry on in his spirit of service.

Therefore be it Resolved: By the Campbell-Kenton County Medical Society that the above mentioned be spread on the minutes and a copy be sent to the Kentucky State Medical Journal for publication.

Committee—W. W. ANDERSON
J. G. FURNISH,
F. A. STINE

Warren County Medical Society.

In the death of Dr. J. N. McCormack on May 4, 1922, Warren County lost one of her foremost citizens and the medical profession of the United States one of its leaders. Coming as he did to this county at the outset of his medical career he has always been one of us. While he removed to Louisville a short time ago we still counted him as a citizen of Bowling Green and Warren County.

With a foresight rarely seen he recognized early in his professional life the value of the individual and to the community of preventive medicine and hygiene. With a characteristic forcefulness he immediately put into action his conceptions of sanitation and prevention of dis-

case by associating himself with the State Medical Society and State Board of Health.

Through his efforts for over forty years in this work he has placed Kentucky in the forefront in preventative medicine, her public health laws of which he was the author now being a model for all the states of the Union. To those of us who knew him intimately, a greater appreciation for this work is felt, when we realize at what a great personal and professional sacrifice it was done. Dr. McCormack denied himself the ambition of being the leader in surgery in Southern Kentucky, but has reaped the reward of being recognized as the greatest exponent of preventative medicine and hygiene in the United States.

Resolved: By the Warren County Medical Society in regular meeting assembled that in the death of Dr. McCormack our society has lost one of its most influential and faithful members, the community a citizen whose life was devoted to the health and welfare of its individuals, and the medical profession a wise counsellor and leader.

Committee—ERNEST RAU,
E. N. HALL,
J. H. BLACKBURN.

Carroll County Medical Society.

At a meeting of the Carroll County Medical Society held in Carrollton, Kentucky, on the third day of October, 1922, the following resolutions were unanimously adopted:

Resolved: That since our brother, Dr. J. N. McCormack has been summoned by the Great Physician to receive his reward in Heaven for services faithfully rendered, we bow to the will of our God and tender our sympathy to his bereaved family, and pay tribute to that illustrious physician and citizen for his self sacrificing services rendered the sick and afflicted of our State and Nation, and for his devotion and loyalty to our profession and country as well as for his watchful and efficient care for the welfare of all people everywhere in proposing and securing legislation State and National for their protection from sickness, diseases and pestilences as well as from the quack and charlatan.

Resolved: That by the death of Dr. J. N. McCormack our profession has lost the counsel and service of a successful, conscientious and faithful member of unusual parts as a citizen, physician and official willing and ready at all times to render the most competent and skillful services for the relief and protection of his fellowmen, and ever zealous for the advancement of the best interest of our profession.

Resolved: That these resolutions be spread upon our records and sent to his family.

ALLEN DONALDSON,
J. M. RYAN.

Graves County Medical Society.

The Graves County Medical Society at its regular meeting upon hearing the report of the recent death of our beloved Dr J. N. McCormack, passed the following resolution:

Whereas: God in His infinite wisdom, has taken from us our friend and co-worker, Dr. J. N. McCormack,

Resolved: The doctors of Kentucky have lost their best friend; the people of Kentucky a public benefactor that cannot be replaced.

To the wife and son we tender our deepest sympathy and point them to the proud fact they can thank God that such a man as he, has lived,

Resolved: That these resolutions be spread upon the minute book and a copy be sent to the State Board of Health.

Committee—GEO. T. FULLER,
MOZA HURT,
H. H. HUNT, Secretary.

Clark County Medical Society.

At a special meeting of the Clark County Medical Society, held at Winchester, Ky., on Friday, May 5, 1922, for the purpose of taking suitable action upon the death of Dr. J. N. McCormack, Kentucky's most widely known and distinguished physician, after feeling tributes had been paid to the character and memory of Dr. McCormack, the following resolutions were offered by Dr. George F. Doyle, Chairman of the Committee on Resolutions, and the same were unanimously adopted:

Whereas: The Grand Physician of the Universe, in His Inscrutable Wisdom, has called from his earthly labors to a home in the Eternal Hospital on High, our distinguished brother, Dr. J. N. McCormack, of Louisville and Bowling Green, Kentucky, who for nearly a half century has labored unceasingly in the cause of humanity and for the uplift and betterment of the medical profession, and while bowing in humble submission to the Divine Will, the Clark County Medical Society cannot refrain from giving expression to our grief for his loss and to our estimate of his distingnished ability, and, therefore be it

Resolved: That in the death of Dr. McCormack not only Kentucky, but all the world, shares in the sorrow of his family and friends and bears loving witness to his world-wide reputation and ability, which will cause him to be mourned in all the lands of the earth and carve his name in a high place among the immortals of the profession he so loved, adorned and honored, and we have an abiding faith that history will accord him in its loftiest annals a place worthy of the great esteem in which he was held by all who knew him, and be it further

Resolved: That we commend the life of our distinguished brother, Dr. McCormack, as one well worthy of the emulation not only of the members of our profession, but of the rising generation of Kentucky, his native State, whose loftiest ideals he so nobly upheld, and be it further

Resolved: That the State of Kentucky and the State Medical Association should cause to be erected in the State lot in the Frankfort Cemetery or on the Capitol grounds, a suitable monument to his memory and achievements, and be it further

Resolved: That these resolutions be spread upon the minutes of the Society, a copy sent to The Kentucky Medical Journal for publication, and a copy to the family of our deceased brother.

Committee—GEO. F. DOYLE, Chairman
I. H. BROWNE,
J. E. BAUCOM.

Breckenridge County Medical Society.

Whereas: In the course of human events, it has pleased Divine Providence to call from our midst Dr. Joseph Nathaniel McCormack, whose contributions to our profession and whose unswerving integrity as a man have marked him as an outstanding citizen of the Commonwealth, and whose passing comes as a distinct loss not only to the profession but to mankind generally:

Therefore be it Resolved: By the Breckenridge County Medical Society, that in recognition of his standing in the profession and as a memorial to his sterling worth as a man and citizen, we pause for the moment to do honor to his name and memory and to extend our sympathy to the bereaved and record our regrets for his passing.

Further: That it is the will of this Society that a copy of this resolution be made upon the minutes of our sessions and a copy delivered to the Kentucky State Medical Association.

Committee—JNO. E. KINCHELOE, Chairman,
A. W. KINCHELOE,
R. W. MEADOR.

Marion County Medical Society.

The following memorial was adopted by the Marion County Medical Society at its meeting July 24, 1922, regarding the death of Dr. J. N. McCormack:

The sudden and unexpected death of Dr. J. N. McCormack at his home in Louisville, recently was a great shock to the members of this society whom we all knew and loved, for his great work in behalf of the medical profession of the Nation and State.

Personally he was a most lovable character. Strong in the convictions of right and justice, never faltering when duty called him. He loved his friends, his profession, his work, as a mother loves her child. His opponents he did not despise, but rather a sympathy, bordering on to sorrow, always ready to forgive and to forget.

Thirty years ago his love for humanity and his profession prompted him to give up, in his prime, a very lucrative surgical practice, to accept the position of Secretary and Health Officer for the State Board of Health at a salary of $1,200 a year. This position he held, and this meager salary he drew for twenty years without any other monetary compensation.

On being admonished that he was making too great a personal sacrifice, he replied, "I expect to devote the balance of my life to the benefit of the medical profession." Well did he do this and faithfully, as those who knew him well can testify.

He was instrumental in the reorganization of the American Medical Association and personally wrote and had passed the present laws of the State Board of Health of Kentucky, considered a model State law, and virtually copied by many States. The wilful offender of this law he vigorously prosecuted to the full extent of his ability. Like "the trooper's horse, he died with his shoes on," with his face toward the enemy.

Dr. McCormack was a great man. Great in his profession, great in his philanthropy, great in self-sacrifices and like the lowly Nazarine, great in the fact that he laid down his life that others might live. He died, as he wanted to die, in the harness.

T. P. WICKLIFFE, President.
T. I. CAMPBELL, Secretary.

Wayne County Medical Society.

At a meeting of the Wayne County Medical Society on August 4, 1922, the committee who had been appointed to draft some statement to expresss our love for the late Dr. J. N. McCormack and our grief and loss that he is now gone from us, report the following:

We recognized in Dr. J. N. McCormack leadership of no small degree. That power to lead and direct was used for many years to bring the medical men of the State of Kentucky and the United States together in one great organization that all the doctors might become better doctors and that all the people might get better medical service.

To "prevent sickness" appealed to him in his early manhood, and as the years passed, the thought was pressed to the front more and more; how shall we protect men, women and

children, from the many diseases which the human being may contract.

He made for himself a national reputation as a sanitarian. No man has done more in the last quarter of a century to show mankind that most sickness can be prevented; that children can grow up to manhood and womanhood without having been stunted by these preventable diseases.

Dr. J. N. McCormack, always a friend to the busy doctor, always a friend to the people, is gone. We loved him, we listened to his wise counsel in his mature years. That voice is heard no more.

For more than three score years he was among men on earth, then the call came to cross over the river, into the great hereafter, where there is no night, no sickness, no death.

J. F. YOUNG, Secretary.
S. W. BRISTOW,
O. M. CARTER,
C. B. RANKIN,
PERRY PARRIGIN.

HARRISON COUNTY MEDICAL SOCIETY.

When the news of the death of Dr. J. N. McCormack came over the wire on the morning of May 4, 1922, the Harrison County Medical Society was called in special session and the following resolutions were passed:

Death has claimed one of the most prominent and dearly beloved physicians of our State.

Dr. Joseph Nathaniel McCormack of Louisville, Ky., died a this home, 1416 S. Third St., this morning, May the 4th, 1922. Death was due to cerebral hemorrhage. He was stricken while in the line of duty, seated at his desk, working for the interest of his profession and for the people of his State.

He was known all over the United States for his work as National Organizer for the A. M. A., and for his pioneer work in drafting and having passed by the Legislature laws protecting the people against quackery and unsanitary conditions. He has the credit of accomplishing more in combating these evils than any other person in the State. He was a born enemy to quackery and unsanitary conditions. He served at different times as President and Secretary of the National Health Officers Association. He has written all the laws on the Statute Books dealing with public health, the practice of medicine and medical education, and for the past forty years has never missed a session of the State Legislature, in the interest of health laws and laws protecting the people against quackery.

Back in the 70's his splendid work along with that of Drs. Luke P. Blackburn and Pinkney Thompson in fighting yellow fever, cholera and smallpox, prompted Luke P. Blackburn in 1878 to create the State Board of Health, with Dr. McCormack as a member. He was elected Secretary of the Board in 1883.

Resolved: That in the death of Dr. J. N. McCormack the profession has lost one of the most useful members and the people of the State a friend that spent his entire life, with practically no remuneration, in the interest of their health.

Resolved: That the Harrison County Medical Society deplores the loss it has sustained in the death of such a useful member of the association.

Resolved: That these resolutions take the usual course.

Committee—J. E. WELLS,
JOSEPHUS MARTIN,
W. B. MOORE.

FAYETTE COUNTY MEDICAL SOCIETY.

The Fayette County Medical Society met in a called meeting on the above date to take action concerning the death of Dr. J. N. McCormack and the following resolutions were adopted and put upon the record:

In the death of Dr. Joseph Nathaniel McCormack every person in our State has lost an advocate of his peculiar rights for good health, every doctor in our State has lost a friend and the whole people of our State and Nation have lost a public servant who has given his life to the cause of health and was stricken in the very act of this cause.

In appreciation of his untiring efforts and his great work for the advancement of medicine and health and steeped in sorrow at it's great loss the Fayette County Medical Society has met in special session upon this the day of his death to do him honor and to tender to his bereaved family our profound sympathy and to assure them of our high regard for Dr. J. N. McCormack.

It is the further resolve of this Society that these resolutions be spread upon the minutes and that a copy be sent to his son, Dr. A. T. McCormack.

J. P. WARREN, President.
S. B. MARKS, Secretary.

GARRARD COUNTY MEDICAL SOCIETY.

The sudden death of our venerated Dr. J. N. McCormack was a profound shock to all the members of the Garrard County Medical Society who deeply deplored the loss to the entire profession of the country. For many years he was our valiant leader and to him we are indebted for the many beneficial medical laws upon our statutes.

No man has done more to elevate the standards of our profession, and no man stood higher in the estimation of the general public. Always honorable and just, ever ready to forgive and forget an offense, he was respected by all who had the pleasure of knowing him.

He was generous in all his dealings and was conciliatory when the occasion demanded, but to the wilful offender he was adamant. Having

decided upon a certain course to pursue no mortal could change his decision unless there was sufficient reason beyond areasonable doubt.

To his bereaved family we extend our condolence; with the profession we unite in sorrow for the loss of a man whose like we may never see again.

B. C. ROSE, President.
J. B. KINNAIRD, Secretary.

LEWIS COUNTY MEDICAL SOCIETY.

The members of the Lewis County Medical Society learn with profound regret the passing of our noble friend and faithful adviser, Dr. J. N. McCormack. We had, each of us, came to know him personally, to love him and to have the utmost confidence and respect for his opinions and advice, which he at all times so cheerfully gave us. While he cannot in person be with us longer, yet the lasting impressions for good, which his noble life has made upon us, has been indelibly impressed upon our minds and will go with us all the days of our lives.

J. D. LILES, Secretary.

MCCRACKEN COUNTY MEDICAL SOCIETY.

Whereas: Our Heavenly Father has taken from his labors of love Dr. Joseph Nathaniel McCormack, the father of public health work in Kentucky.

Whereas: The profession has lost its pioneer in medical organization.

Whereas: The arch stone in medical association has been removed.

Whereas: The man who conceived the plan and purpose of better medical education and toured the county in the interest of his profession has been removed from our midst.

Whereas: Dr. McCormack, in conceiving and working for post graduate courses in all local societies in the United States, inspired the profession and blessed untold thousands.

Whereas: We have lost the arch enemy of quackery and quasi practitioners.

Whereas: The Henry Clay of the Kentucky State Medical Society and legislative constructive work has been taken from us.

Whereas: Dr. McCormack was the pioneer and father of medical legislation, having written all the laws of medical practice in Kentucky.

Whereas: His service in the cholera epidemic in 1888 was so great that it called forth official thanks from the President of the United States.

Whereas: The fountain head of all the meritorious work undertaken by and now carried on by the State Medical Association has been removed:

Therefore be it Resolved: First, that the State has lost a peerless citizen. Second, that the people have lost a friend of the poor. Third, that the profession has lost a tireless worker with no one to fill his place.

Therefore be it further Resolved: That a copy of these resolutions be sent to the Kentucky State Medical Journal, to the family, and a copy be spread on the minutes of this society.

Committee—C. E. PURCELL,
E. W. JACKSON,
O. R. KIDD.

HENDERSON COUNTY MEDICAL SOCIETY.

At a meeting of the Henderson County Medical Society, held Monday evening, May 8, 1922, the following resolutions were unanimously adopted:

In the death of Dr. J. N. McCormack there has passed into the great beyond a man of unusual gifts and abilities. His was a strong character and his influence was always on the right side of every question that concerned the medical profession of the State in which he lived and died. It is but natural that Kentucky should deeply mourn him. He was a zealous lover of his profession and a sworn enemy of quackery. With all he was liberal in his attitude towards progressive medicine and kept the open mind in things new.

Dr. McCormack was a man of winning, genial manner, and attracted friends from every walk of life. His unselfish and loyal friendship will keep his memory bright for many a year with all those who knew him. As State Health Officer, he will be long and well remembered by the medical profession throughout the United States. Of the many medical societies to which he belonged they were richer because of the active part he took in them. Physicians like Dr. McCormack were born physicians, not artificially made in medical colleges. He was a true physician, an earnest and faithful friend, a thorough gentleman of the old school and a loyal citizen.

Be it Resolved: By the Henderson County Medical Society, that we hereby testify our high appreciation of the noble qualities that have distinguished Dr. McCormack as a leader in his profession and that in his death Kentucky has lost one of her most valued, useful and leading citizen. We hereby tender to the bereaved family our sincere sympathy in this great affliction.

Be it further Resolved: That these resolutions be spread upon the minutes of the society and a copy be furnished the Kentucky Medical Journal, and his bereaved family.

Committee—W. V. NEEL,
ARCH DIXON
JAMES H. LETCHER.

FLEMING COUNTY MEDICAL SOCIETY.

At the regular meeting of the Fleming County Medical Society, July 12, 1922, the following resolutions were adopted:

Whereas: In the providence of Almighty God, our staunch friend and professional colleague Doctor Joseph N. McCormack has departed this life and

Whereas: We recognize in him a most faithful and true friend of our commonwealth and nation and a most efficient and ardent supporter of every cause that had for its aim the prevention of disease and the preservation of health, therefore be it

Resolved: That in his departure this Society has lost an appreciated advisor and our whole profession a noble and most able advocate of advanced higher standards; the Commonwealth one who always had her best interests at heart, and our Nation a progressive citizen and a Public Health Official second to none.

It is further Resolved: That this Society express its sincere sympathy and affection to the bereaved family, place these resolutions upon our records and send a copy to our state Medical Journal for publication.

Committee—C. R. GARR,
A. S. ROBERTSON,
C. W. AITKIN.

Whitney County Medical Society.

The following resolutions were passed by the Whitney County Medical Society on October 6, 1922, on the death of Dr. J. N. McCormack:

The medical profession of State and Nation has lost one of its ablest men, the cause of public health has lost an ardent supporter and tireless worker; he was a man who will be missed by all who knew him; love, kindness, and ability never more combined in any one man's character than in Dr. McCormack's, his life and work could well be a pattern for every man in the medical profession in Kentucky; we pledge our support to his son, Dr. A. T. McCormack, as the man best prepared to carry on the great work heretofore done by his father.

Committee—J. D. ADKINS,
L. B. CROLEY,
E. S. MOSS.

LaRue County Medical Society.

The following resolutions were passed concerning the late Dr. J. N. McCormack who was a citizen of this county in early life:

Whereas: That in the death of Dr. Joseph N. McCormack, who was born and reared in an adjoining neighborhood to us, in fact so close to us that we regarded him as one of us and he was so greatly and universally loved and esteemed by us, for his good qualities of heart and mind, as well as his superior professional achievements, that the members of this society suffered the touch of bereavement as well as the loss of a great professoinal leader and brother.

Therefore be it Resolved: By the LaRue County Medical Society that the Commonwealth lost a patriotic, progressive and philanthropic citizen. That the medical profession lost not only an able and skilled practitioner, but the foremost and most capable member of the State Board of Health of this or any other State in the Nation.

Resolved: That we hereby tender to his sorrowing widow and son our sincerest and tenderest sympathies in their sorrow and sadness.

Resolved: That we pledge our support to A. T. McCormack to further the most excellent administration of J. N. McCormack.

Resolved: That these resolutions be published in the Kentucky Medical Journal, the LaRue Herald-News, and copies sent to the widow and son of the deceased as well as recorded in the minutes of this meeting.

LEE MAUPIN, Secretary.

Nelson County Medical Society.

At a meeting of the Nelson County Medical Society, June 7, the following resolutions were adopted on the death of Dr. J. N. McCormack:

Whereas: The Almighty Arbiter of life and death has called from us Dr. Joseph N. McCormack, and

Whereas: By his death the medical profession loses one of its most distinguished men both personally and professionally;

Therefore, be it Resolved: That we mourn the termination of a career so filled with useful service to humanity; so admirably adapted, by natural endowment and actual accomplishment, to maintain for our profession its rightful place in the esteem of men; and

Resolved: That we express our sense of its irreparable loss sustained by those who, coming within the reach of Dr. McCormack's winning personality enjoyed the privilege of his friendship; by the profession in which he was so eminently successful; by the State to whose welfare and progress he contributed so greatly; and,

Resolved: That we extend our sympathy not only to the wife and son most immediately affected by his death, but to the membership of our profession, and the citizenship of our Commonwealth, as well, since all have suffered a severe bereavement; and,

Resolved: That these resolutions be spread upon the records of the society, and a copy of them sent to the family.

R. H. GREENWELL, Secretary.

Pike County Medical Society.

The medical profession of Kentucky has again been visited by the "Grim Reaper," which trimmed our ranks by choosing for his mark our beloved brother, J. N. McCormack, who passed to his reward May 4, 1922, the highest eulogy that could be pronounced upon this man, would be the simple narrative of his life, which of course cannot be embodied here, in these resolutions we can but pay a slight tribute to his merited worth, our deceased

brother was gifted, pure and upright, was possessed of sterling integrity and vigorous intellect, and in his death we lament the loss of a member, a noble man, an eminent and upright citizen, there is a Divinity that doth hedge a King, he was a king amongst men, was amiable in disposition, courageous in action, firm in purpose, and unyielding in his adherence to the right, his strength of character, qualifications and attainments fitted him to have adorned any station, his true worth to our profession as counsellor and brother was very great indeed and his vacant chair can never be filled, the example of such a life merits our commendation and challenges our emulation. But the silver cord is loosened, the golden bowl is broken, his dust has returned to the earth as it was, and his spirit unto God who gave it.

Whereas: It has pleased God to remove our brother from his station in our profession to a more important one. But while we cherish the memory of our honored dead, and can but lament the decree that took him from the distinguished place he held among us as brother and friend our hearts turn to those who are left behind, and our sympathies are extended to them, they who are so sad, so lonely and so sorrowful, and we mingle our tears with theirs, and by way of consolation we point the striken hearts to the sweet Bye and Bye, where amidst the ever living throng we will know each other there, while singing the song of redemption, whichever the angels cannot sing.

Resolved: That the Pike County Medical Society has lost one of its most faithful advisors.

Resolved: That a copy of these resolutions be sent to the Kentucky State Board of Health, one to his family, and one to the Pike County News for publication.

Committee—Z. A. THOMPSON
R. T. JOHNSON
M. L. FLANARY.

Madison County Medical Society.

The following resolutions were passed by the Madison County Medical Society, August 3, 1922:

Whereas: It has pleased the Almighty to remove from our midst by death our esteemed friend and wise counsellor, Dr. J. N. McCormack, who for many years has occupied a prominent place in the Medical Councils not only of our own State, but of the Nation as well, maintaining at all times a character untarnished and a reputation above reproach.

Therefore be it Resolved: That in the death of Dr. J. N. McCormack the medical profession of the State has lost not only its most distinguished member, but a friend and Counsellor who was always strived for higher professional ideals, and more efficient service on the part of the physician, and better sanitation and improved living conditions for the people. That we offer to his bereaved family and friends our heart-felt condolence.

Be it further Resolved: That these resolutions be spread on the minutes of this society and a copy be presented to the family of our deceased friend, and a copy be sent to the Kentucky State Medical Journal.

Committee—MURISON DUNN,
OMER F. HUME.

Christian County Medical Society.

At a meeting of the Christian County Medical Society the following resolutions were unanimously adopted:

Whereas: Dr. J. N. McCormack has been removed from our midst and

Whereas: This Society, the State Society and the medical profession of the United States has suffered an irreparable loss therefore, be it

Resolved: That individually and as a society we deeply mourn the loss of one who has at all times and under all circumstances been the sponsor of the medical profession and has labored untiringly and unceasingly for that which was best in and for the profession.

That the medical body of the United States has suffered the loss of one whose place as a leader in the profession and as builder of the great principles of organized medicine can never be refilled.

That we miss his wise counsel and will keenly feel the loss of his personal friendship and kindly feeling for us as a society and individuals.

His was an interest that extended far beyond the individual and embraced a foresightedness for our welfare as an organization that is given to few men to conceive.

He had a vision of the future of American medicine that was ideal and he lived to see his labors bear fruit.

Upon this foundation he has builded, will arise a united profession working for this ideal for which he devoted his best years and efforts.

Committe—J. L. BARKER,
W. W. DURHAM,
R. L. WOODARD.

Carlisle County Medical Society.

Mr. President and fellows of the Carlisle County Medical Society, I wish to offer the following memorial.

Dr. Joseph Nathaniel McCormack is dead.

At the age of 75 years, in his home in Louisville, Ky., on May 4, 1922, he passed suddenly to his reward.

He was conspicuous as a man, a physician and as a philanthropist.

Strong in his individuality and genial in his personality.

For many years he was a recognized leader in the State and Nation in medical education, legislation, organization and public health work.

He was always alert to the best interests of the Kentucky State Medical Association and to the progress and development of public health measures connected with the State Board of Health of which he had been an active and efficient member for many years, and to him was due the honor more perhaps than any other one man for the formulating and enacting of laws in our State for the protection of the people against fraud, incompetency and quackery and for the advanced position public health legislation now enjoys.

A man with a vision, high ideals, lofty aspirations and of sterling integrity.

To know Dr. McCormack was to admire and love him.

Respectfully submitted,
WM. L. MOSBY.

The above was unanimously adopted.

R. T. HOCKER, President.
G. W. PAYNE, Secretary.

Mercer County Medical Society.

At a meeting of the Mercer County Medical Society on September 12, 1922, the following resolutions were adopted:

Resolved: It is the sense of this society that, in the recent death of Dr. J. N. McCormack, the medical profession, both State and Nation, have suffered an irreparable loss. As an efficient Public Health Officer he served his State for more than a quarter of a century, always glad to render aid to suffering humanity, ever alert and ready to make use of any opportunity whereby the betterment of his much beloved profession and the public could be served. The present health organization, now so effective and helpful throughout the State, the Kentucky State Medical Association, as now organized, and the wonderful regime of the American Medical Association are "children of his brain and genius." The members of the Mercer County Medical Society with the deepest sorrow mourn the death of this great man who has done so much good in his chosen profession and public health work.

Resolved: That a copy of this resolution be sent the Kentucky Medical Journal for publication.

J. TOM PRICE, Secretary.

Hickman County Medical Society.

Whereas: The Hickman County Medical Society being in session have just received a telegram announcing the death of Dr. J. N. McCormack;

Therefore be it Resolved: That we feel the great loss the profession has sustained in the death of our grand and beloved Director of Bureau of Sanitation and also the Father of Modern Medical Ethics.

We deeply sympathize with the bereaved family in their great loss of a husband and father;

Therefore be it further Resolved: That these resolutions be spread upon the minutes of Hickman County Medical Society, a copy be sent to the beloved family and one to the Journal for publication.

Committee—W. W. RICHMOND,
W. R. MOSS,
E. R. HOWELL.

Cumberland County Medical Society.

At the regular August meeting of the Cumberland County Medical Society the following resolution with respect to the death of Dr. J. N. McCormack was unanimously adopted:

Whereas: The Infinite God of us all has called from our midst and from the field of his great endeavors Dr. J. N. McCormack, and,

Whereas: The life and professional career of this great man, physician and scientist have elevated him to so high a place in the profession that we sincerely feel that his place cannot be filled and that the profession and world at large will strive in vain to find his successor, and,

Whereas: We desire by this memorial in the feeble way possible to us to testify to our regard for Dr. McCormack his noble life and his unmatched professional achievements,

Be it Resolved: That to that end these resolutions be adopted by the Cumberland County Medical Society and spread upon the records of the same and that a copy be sent to Dr. Arthur McCormack, the son, and a copy of same to be printed in the Journal of the Kentucky State Medical Society.

J. E. BOW, President,
W. C. KEEN, Secretary.

Grayson County Medical Society.

We, as a committee appointed by the members of the Grayson County Medical Society, draft resolutions of respect to our former leader, Dr. J. N. McCormack.

Resolved: That we deeply lament his death and feel a great loss in one so worthy and who has served our profession so faithfully.

We extend our sympathy to his bereaved family.

Resolved: That a copy of these resolutions be entered in our minutes and also sent to the American Medical Journal for publication.

G. W. ARNES, President.
C. L. SHERMAN, Secretary.

Kentucky Association of Optometry.

Whereas: On the morning of May fourth, just when the shadows of night had been rolled back over the western horizon, and the heavens were sprayed with the silver light of breaking day shot with shafts of crimson and gold, a messenger came to Louisville and

Whereas: This messenger, the dark angel of death, paused over the home of our lamented friend, Doctor Joseph Nathaniel McCormack, enshrouded his form in the ominous shadow of it's wings and delivered a fatal message and;

Whereas: This message was a summons from the King of Kings to our lamented friend to cease his labors and come to a well deserved rest, we acknowledge our inability to interfere with or stay the execution of that divine decree. With the resignation of a trained soldier who knew he had fought life's battles valiantly under the banner of uniform justice, and with that dauntless courage that characterized him in life's engagements, our friend and co-laborer looked back over the vista of years, each of which is marked by indestructable monuments that shall protect the future generation his genius and achievements, and then, with eyes turned toward the great beyond, he was soothed into that long and dreamless sleep from which there is no awakening and started upon that mystic journey from which no weary traveler has ever returned; therefore be it

Resolved: That in the death of Doctor Joseph Nathaniel McCormack the nation has lost a genius whose counsel will be missed in the future gatherings of those who would serve humanity, and our state has lost a worthy son of whom she may well feel proud. The home that he loved and ministered to with tenderness has suffered the greater loss, and the Kentucky Association of Optometry has lost a champion whose exalted ideals and uniform justice endeared him to all who were privileged to know him. Therefore, be it further

Resolved: That the Secretary of the Kentucky Association of Optometry be, and hereby is, ordered to spread upon the minutes of this convention now in session these resolutions, and have a copy of same made and forwarded to the widow and family of our late lamented friend.

Respectfully submitted,
Committee—B. F. FOSTER, Chairman,
A. S. HENDRICKS,
THOMAS M. HOWE.

LETTERS AND TELEGRAMS.

Dr. McCormack's family and the State Board of Health received thousands of letters and telegrams of condolence after his death. From these, a few have been selected as typical of the esteem in which he was held and are herewith published.

Dr. J. G. South, Minister Extraordinary and Envoy Plenipotentiary, of the United States of America, Panama, and ex-President State Board of Health and State Medical Association of Kentucky.

I cabled you yesterday but I was so profoundly shocked by Dr. McMurtry's cable announcing the death of your father, that I really felt unable to write.

While I knew that your father had been breathing very rapidly for the past few years, I was really unprepared for the announcement of his death.

I am utterly unable to express to you how deeply affected I am. You know well my love for him and my admiration for his work.

I have always considered him one of the greatest of benefactors to the poor, needy, helpless and sick, and in fact to the general public.

His name will always remain through the memory of his work. He truly devoted his life to a great cause and served that cause with unfailing devotion and the greatest ability.

As I cabled you, I fully realize that I have sustained in the death of your father a very great personal loss, but at the same time a realization comes to me that the State of Kentucky and the medical profession has sustained even a greater loss.

Your father was an inspiration to me in public health work and I consider that I have been greatly honored by having been permitted to serve under, and with him.

I am enclosing a letter to you from President Porras of Panama, and also a note that the President addressed to me.

I trust you will convey to your mother the heartfelt sympathy of both my wife and myself. I would like to write to her personally but frankly I do not feel able to undertake to express my sympathy in this awful hour to her.

Knowing my love and friendship for you and my devotion to your father, I know I need not even attempt to express to you how deeply I feel for you. Know that I fully realize what it means to you and yours, and always remember me as your devoted friend.

President Belisario Porras, Republica de Panama.

It is with the deepest sorrow that I have been informed of the death of your beloved father, Dr. Joseph N. McCormack, who not only was famous in Kentucky, but outside of the United States.

Believe me that I partake of your sorrow in these moments.

Dr. Hugh Cumming, Surgeon General, U. S. Public Health Service, Washington, D. C.

"Please allow me to express in a very feeble way my sympathy for you in your sorrow. This country has produced few higher, finer men than Dr. McCormack and none who have accomplished more for his fellow men.

"I feel a real sense of personal loss as must all of our profession.

Dr. Robert E. Noble, Brig. Gen., M. C., Washington, D. C.

"I have only today seen the announcement of the death of your illustrious father. I am greatly grieved, and wish to express to you my sympathy. I know that there is nothing I can say to you that will lessen your sense of loss but having gone through the same sad experience, I know how you feel and can sympathize with you. Also I have a feeling of personal loss, as I always admired him, and had for him a feeling of affection.

I am with sympathy, sincerely yours."

Mrs. Cora Wilson Stewart, Frankfort, Ky.

"I desire to extend to you and your mother my heartfelt sympathy in the great loss which you have sustained. In the passing of your noble father, Kentucky lost her greatest benefactor and I lost my best friend.

Your father measured up to every line of Kipling's 'If' and I once sent it to him, 'Dr. McCormack, this is you.' With his characteristic chivalry he wrote back, 'No, Mrs. Stewart, it is you.'

I so rejoice that his triumph over the forces opposing health was so complete. He saw all of his policies vindicated and all of his enemies vanquished, then the Lord thought it time to promote him, so called him up higher. His influence will live through the ages and therefore he is not dead, but watching from a higher realm with his encouraging smile and his faith that those he loves will do their best as he has done his best."

Chester Harding, Brig. Gen., U. S. A. Retired, Vineyard Haven, Mass.

"I have received a copy of the Courier-Journal containing notices of the illness and death of your distinguished father. He seems to have been stricken while at work, and was sparred the long lingering illness and the gradual decline of his faculties that are so often the accompaniments of old age. I know from what you have told me how near and dear he was to you, and you to him, and I can realize the depth of your sorrow.

Mrs. Harding joins me in sincere sympathy for Mrs. McCormack and yourself in your affliction."

Dr. J. W. Crenshaw, Cadiz, Ky.

"You doubtless are overwhelmed with letters and telegrams of sympathy, in this your hour, but I want you and your good mother to know that you are in my mind and on my heart, as I read the serious illness of your beloved father. Probably by the time this reaches you, the father will have passed away. He was my friend. I esteemed him as I have few men. He will be wonderfully missed. May the Lord comfort your hearts."

Hon. Robert C. Simmons, Covington, Ky.

"I want to send you a line to express my sympathy for you and my own sense of personal loss in the death of your father. I was an extravagant admirer of his and felt drawn to him from the first time I met him many years ago. He did a big work in a big way and the realization of what his services meant to State and Nation will be more clearly defined as time passes

He has transmitted to you and yours a heritage of good deeds and good will, which will be an abiding inspiration and source of pride. That his example and the things accomplished by him may be and continue to be the means of aiding you in carrying on the work so brilliantly inspired by him is the wish of your friend."

Dr. Walter Byrne, Sr., Russellville, Ky.

Have you ever had the pleasure of visiting some of the wooded slopes on the Pacific Coast of our great country, the United States of America? Have you ever visited any of the lumber camps in that region, and witness the fall of some grand monarch of the forest? Seen the first stroke of the shining ax of the woodman as it bites deep into the outer bark, then stroke after stroke falls until the notch is made, a great gapping wound. Then see the cruel looking teeth of the saw as they cut their way through the tree's sturdy body; see it quiver as the saw eats away it's heart, and then for a moment it seems to rustle every twig and leaf and then the fall. If you have you can realize the taking off ofthat Prince of Good Fellows, Dr. Joseph N. McCormack.

The blow has fallen. The Giant is laid low. We who are left mourn his departure hence. Let us strive to emulate his virtues. "A kindlier man ne'er did breath." The poor were his especial charge. His hand was ever ready to succor suffering humanity. Every claim was allowed.

In his early life no night was too dark, no road too muddy, no temperature too low, no sun too hot, to deter him from answering a call to the sick and suffering. No thought of "can they pay or will they pay," but rather, "Can I help them" was ever foremost in his busy brain.

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In his early life no night was too dark, no road too muddy, no temperature too low, no sun too hot, to deter him from answering a call to the sick and suffering. No thought of "can they or will the pay," but rather, "can I help them" was ever foremost in his busy brain. By assiduity and efficiency he forged to the front. Then opportunity knocked at his door, and his real life work began. To his work as Secretary of the Kentucky Board of Health, he brought a master mind. He found a babe in swaddling-clothes, he left it, a young giant yet unacquainted with it's potentiality for good. But as the years go racing along, more and more will the good that Joseph N. McCormack's intellect has wrought be brought home to the profession and to the people too. His earnest endeavor, his untiring energy, his bravery amid seeming disaster, his poise, and his cheerfulness which was truly wonderful will long be remembered. The cheery greeting, the firm clasp of a warm hand, the pleasing smiles are gone, and we all shall miss them as our foot steps echo down the corridors of time. The young will miss him, for he was their friend and mentor; the middle aged will miss him for he was their inspiration and encouraged and stimulated them to fresher and ampler endeavors; the old will miss him for his companionship and love. Vale! vale! big-soul, big-hearted, big-brained Joseph N. McCormack.

M. H. Thatcher, Attorney-at-law, Louisville, Ky.:

"Please be assured of the most earnest sympathy of Mrs. Thatcher and myself for your mother and yourself and the others of your family, on account of the great bereavement which has come to you."

"Your Father was, indeed, a remarkable man, and his going, though at so ripe an age, seemed to us who always saw in him the wonderful cheerfulness, courage and buoyancy of youth, as being untimely."

"Any words of encomium I might utter, touching the remarkable life, character and service of your Father, would seem trite. His place is secure. Like Gorgas, he was a great sanitary strategist, and his work here, like that of Gorgas in other fields, was of far greater value than may be commonly understood, because it was preventive in character."

Dr. Archibald Dixon, Henderson, Ky.

"It both grieved and shocked me to see the announcement of the sudden death of your distinguished husband, in this morning's paper. In his death you and Arthur suffer an irreparable loss; in this loss, thousands and thousands will deeply sympathize with you. The entire medical profession of Kentucky, knew him and admired and loved him. Not only is this true of Kentucky, but it might be said that the entire medical profession of the United States also knew and admired him for the great work he had done. 'The world is better that he lived.' There are only a few of us left who knew and helped him as best they could at the beginning of his splendid struggle for the prevention of disease; betterment of health, by sanitary and hygiene measures, necessary to the prevention of diseases which were preventable. The State Board of Health of Kentucky, is today a living and active evidence of what he accomplished and was accomplishing. Wherever and whenever, State Boards of Health are spoken of, the name of Dr. J. N. McCormack at once is thought of and these thoughts will serve to keep his memory green for ages to come.

"I rejoice that Arthur is left to continue the great work of his Father and that he is fit and worthy to wear his mantle—the mantle of a great man and benefactor of his fellow men.

Please accept my deep and heartfelt sympathy. 'May the Peace of Allah abide with you.'"

Dr. Hugh E. Prather, Hickman, Ky.:

"I truly trust that you had returned from your western trip and was with him when the end came. Between you and him there was always a most beautiful comradeship."

That you may know the sincerity of my admiration for your father, may I tell you that, on last "Father's Day" in a short talk which I made to the Men's Class in our Sunday School, I used him as a concrete example of an ideal father. I feel a great personal loss because this ever genial disposition was a real inspiration.

I am glad that The Kentucky Medical Association, for which he did so much, tried to express to him, while he was yet with us, it's great appreciation of him and it would delight me very much if this great Association would in some way endow a suitable memorial to him.

I firmly believe that our Savior prepared a place for him when he said, "Blessed are the pure in heart for they shall see God."

Dr. E. A. Hines, Secretary-Editor, The Journal of the South Carolina Medical Association, Seneca, S. C.:

"I note in this mornings A. M. A. Journal an account of the death of your distinguished Father.

For nearly twenty years he has been my ideal of the highest type of the American doctor. His life has been a great inspiration to me personally and I have always looked upon him as the greatest benefactor of American medicine.

Permit me to mingle my tears with yours for I feel that I have lost a warm personal friend."

Dr. Wm. A. Pusey, Treasurer, American Medical Association, Chicago, Ill.:

"I was shocked to find notice of your father's death in the Elizabethtown News which I opened yesterday, and now I find notice of it in the Journal. Hardly anyone's death would have been more surprising to me, and none, outside of my own family, as distressing. I think it is three weeks tomorrow, since I called at your house and had a delightful hours chat with him and your mother. The only compensation in the situation is that he died as he, I am sure, would have like to die. I know few fathers or husbands would be missed as much as he will be missed by you and Mrs. McCormack. Please give your mother my love. With genuine sympathy."

James H. Letcher, Henderson, Ky.:

"I am shocked and deeply pained at the sad news the newspapers bring us, of the sudden death of your distinguished father, and my friend.

I wish to join his and your hosts of friends not only in Kentucky, but all over the United States, in condolence for your mother, yourself and your wife. What a loss, what a loss to our Country.

I know that in such deep bereavement as you all are passing through now, human words can bring but little, if any, comfort, and I can only pray that our Heavenly Father, will give each of you in great abundance, His Holy Spirit, The Comforter."

Dr. T. A. Frazier, Chairman, Crittenden County Council National Defense, Marion, Ky.:

"Kentucky's greatest man passed away in the death of your husband and father, J. N. McCormack, has given a life of service to Kentucky such as no other man dreamed of, and which can never be equaled unless it is by his worthy son, A. T. McCormack.

Dr. McCormack was a pioneer in health work and has lived a generation ahead of his time. We who have watched his wonderful work have wondered why one could see so far ahead of those about him. He was called a dreamer by many of his best friends and thank God he lived to see most of his dreams come true.

The last time I talked with him was during the meeting in February and he told me that the success of that great gathering was the greatest source of happiness that had ever come to him. He told that he wanted to die as he had lived, at work, that his greatest ambition was to live to see an all time health officer and effieient public health nurses in every county in the State.

He was an idealist in many respects; but his idea was to serve our beloved state, to make it the healthiest place on earth to live and to see our people the happiest.

I feel the personal loss of a tried and true friend, one whom I loved and loved to honor, a leader whom I loved to follow. He was always wise in council, courteous and tolerant to them who differed with him.

I know mere words become puny things when we try to console one who has suffered such a great loss; but these words come from my heart and I pray that you may have all the blessing this world has in store for God's children."

Dr. W. S. Rankin, State Health Officer, North Carolina State Board of Health, Raleigh, N. C.

"I know that you know that I have a very genuine sympathy for you in the loss of your father, but it occurs to me that it may help us both if I say so and tell you very briefly how I feel about his going.

I can understand, at least in a way, how very much he meant to you not only as a parent but in the comradeship of experience and ideals, and in his tremendously helpful influence in your work. Few men are blessed with parents who both in blood and brain are so near to them and so helpful to them as your father must have been to you. I think I appreciate, in a measure at least, how you must feel, and I sympathize with you more than I

can tell you. I can feel with you in your special loss because the death of your father means for all of us a general loss, the loss of a friend, the loss of a benefactor whose work and influence has been unconsciously felt by all health departments in this country, federal, state, and municipal and, I believe consciously realized by the great majority of them all.

May God rest his soul, and his spirit realize that everlasting happiness which must come to one, like him, whose great life was given so largely to making the lives of others more efficient and happier is the sincere wish of, your warm personal friend."

Dr. F. J. Runyan, Clarksville, Tenn.:

"I need not tell you how I deplore the loss of my longtime friend. I loved your Father devotedly and he had a place in the hearts of my entire household. I have always felt, had he been president of the American Medical Association and Governor of Kentucky—both would have had the best administration in their history. This is saying a great deal but I truly believe it.

I do hope the marvelous organization he had in Kentucky can be maintained in its present thorough manner.

I want you to know we all share your sorrow."

Dr. J. M. Mathews, Los Angeles, Cal.:

"I have just learned of the death of your dear father. I know that words express but little, in so great a bereavement as this, but you will permit me to say that I grieve with you. As I have so often said, he was one of my best and dearest friends. One that proved his friendship not by words only, but by works—what a strong and good man he was. For a friend he would do all within his power, not expecting reward or profit for himself. His place cannot be filled in my heart. May God be with you and yours, in this sad hour. Believe me in great sympathy."

Dr. Thos. McDavitt, St. Paul, Minn.:

"I was shocked to read in the A. M. A. Journal, of the death of your father. He was one of my heroes and I can hardly express my sorrow and sympathy. Please give my expression of deep hympathy to your mother and believe me, yours sincerely,

Rr. Edw. C. Laverty, Louisville, Ky.:

"Have been here attending the meeting of the Iowa State Medical Society.

A letter received from my wife conveys the sad news of your father's death.

I am sure the editorials in the Times and Herald expresses the ideas and feelings of every thinking citizen of our great commonwealth regarding our Dr. J. N. McCormack.

To those of us who travel into other states and hear expression in the highest terms regarding his unusual abilities and accomplishments, the loss of his usefullness will be even greater.

The burden of carrying on this great work which he has so splendidly started in the face of multitudinous difficulties now rests upon you.

I know it was his ambition to have you take up the ordeal of making even a greater success of the most important factor in the attainment of happiness and general welfare of our citizens.

I believe you fully appreciate this and will carry out the work as he wanted you to do and your friends will be with you in your efforts to this end.

With deepest sympathy in your great loss, I beg to remain your friend."

Dr. A. R. Mitchell, Trustee, American Medical Association, Lincoln, Neb.:

"It is always a shock to learn of the passing of a useful life and when that life has been closely associated with interests so important to the welfare of a great profession it appeals to all of us. Words of consolation, my dear friend, are of little value but consciousness of the fact that your father had done so much for the profession must be a great comfort. I want you to know, doctor, that you have my sympathy in your loss and that the spirit of friendly interest and genuine regard and respect I had for your father makes his loss more nearly personal. His record of service will remain as one of the outstanding facts in the medical history of America."

C. P. Loranz, Secretary-Manager, Southern Medical Association, Birmingham, Alabama:

"I just noticed this morning an account of the death of your father. I want to extend my deepest sympathy in this hour of bereavement. During the years I have been associated with the Southern Medical Association I have come to know much of the splendid work he has done for organized medicine, not only in his home state but throughout the nation. It should be a great comfort to you and his other loved ones, and to those who have been associated with him during the active years of his life, to know that he leaves a monument to his name that will stand for ages."

Dr. Jas. B. Bullitt, San Jose, Calif.:

"In the *Journal of the American Medical Association* of May 13, which has just reached me, I have seen the notice of Dr. McCormaek's death on May 4th. Permit me to join a great multitude of physicians throughout the United States in regret that the great heart and brain of J. N. McCormaek are stilled."

Dr. Wm. J. Mayo, Roehester, Minn.:

"I have just learned of the death of your father, Dr. J. N. McCormaek. To know him was to respeet and admire him. Broad-minded, sagaeious, loyal to prineipals and to his friends. His memory will always be eherished.

Mrs. Mayo joins me in love and sympathy to your dear mother and to yourself and family."

Dr. Frank Billings, Chieago, Ill.:

"This morning I returned after twelve days' absenee in the east and found a telegram from Dr. Lewis McMurtry announcing the passing of your Father on May fourth. The news is a great shock to me and partieularly because when I last saw him he seemed so young and vigorous and well.

Of eourse, I need not tell you of the respeet and the affeetionate regard in whieh I held your father. He was a souree of inspiration to me during the long years of our acquaintanee. In the earlier years of our assoeiation it was my fortune to see him frequently and to profit by his great knowledge, broad point of view and intelleetual honesty in regard to all matters pertaining to the welfare of the medieal profession and of the general publie. I regret his passing more than I ean express in words and I am glad indeed that it was my fortune to know him and call him my friend.

Please aeeept for yourself and the other members of the family, my sineere sympathy in this great bereavement."

Dr. W. A. Evans, Health Department, The Chieago Tribune, Chieago, Ill.

"I want to add a word or two to our telegram of last night.

Your father was a great man. For some time it had been running through my head that the A. P. H. A. should arrange a banquet to honor him as the senior American Health Offieer in point of eontinuous serviee as well as a great publie servant. Of eourse no one ean deny that no other man since the early days of N. S. Davis has rendered so great a serviee to the medieal profession but there are those who like best to think of him as a loyal friend.

I will always remember him as I saw him in Louisville in the early part of the year fighting before the legislature for health measures. He was uneasy and nervous but he was battling resoureefully, eourageously and with all the vim and determination of an old war horse. And then my mind runs back to 1911 when he spoke so kindly, eharitably and forgivingingly of men who had forsaken him. Please tell your mother and others of your family of our deep sympathy."

Dr. W. S. Foster, Pittsburgh, Pa.:

(Dr. Foster has reeently joined his friend in the Great Beyond.)

"I was shocked to note the death of your father in our paper. Let me mourn with you his passing away. We had been friends for more than a quarter of a century, he was so genial and eompanionable. I will look for some details in the A. M. A. Journal."

H. L. Trimble, Cashier, Citizens National Bank, Russellville, Ky.:

"I sympathize with you and your Mother in the loss of your noble Father. My acquaintance with him was slight, but a man's good name follows him wherever he goes, for he is known by his fruits.

My brother served in the legislature with him and I have heard him tell often his prominent friends that it paid to stiek to a man of his ealibre for he had done more for Kentucky than any man he knew of.

Will you kindly extend to your Mother my sineere sympathy in her great sorrow?"

Paul Hansen, Former State Sanitary Engineer of Kentueky, Chieago, Ill.:

"I was very mueh shoeked to learn that your father is dead. Even though he was well along in years, he was so aetive and looked so young that I eonfidently expeeted to see him eontinue his aetive life for at least ten more years.

There is one eomforting thought in that he probably passed away aeeording to his own wish—still aetive and doing good. Among all the men I have ever known he stands out as the most pieturesque, the most faseinating and the most likable. His was one of those rare personalities which like that of 'Marse' Henry Watterson will leave an impress on thousands of people who will be better and happier for having known him .

Everybody carries in his memory a eertain number of incidents whieh they never forget. One of the most vivid of these mem

ories in my case is the instant fondness I felt for your father the first time I met him on the front porch of your home at Bowling Green.

I am not very good at expressing sympathy but I am sure I can appreciate the loss thaty ou and your family muct feel."

"I've only just heard the sad news. Let me lay my hand gently upon your shoulder. Words can tell no more from his friend and yours."

"It is a rare occasion in any man's life that such a personality as that of your father comes into view; certainly it is so in my own case and his passing I reckon as a distinct and great loss not only to myself but to the State and the Nation that he served so faithfully and so well.

You are greatly to be congratulated on the splendid memory you have of him and on the close association with so fine a spirit."

It is altogether fitting that with his work largely accomplished he should cease from his labors.

With a very certain assurance of the indirect help he has been to me, I remain."

"It is with heart felt sorrow and the tenderest sympathy for you and yours, that I learned of the death of that greatest of Kentuckians, the most able, useful, and learned physicians, and above all one of the most lovable characters, and finest man I ever knew, your dear and beloved Father.

Some twenty or more years ago, I had just located in the state, I attended a meeting of the state society at Georgetown, and there I had the pleasure of meeting him for the first time, and his action, ability, earnestness, and enthusiasm for all that was good in medicine was a very great inspiration to me and I am proud that from that day I have been honored in being permitted to be one of his loyal supporters."

Yes, I loved him like a father and his loss is to me a personal one, and had I have known of the arrangements sooner I should have considered it a privilege to attend the funeral and paid my respects to the memory to one of the greatest characters I ever knew."

"It was with great regret that we heard of the death of your father. We know the sorrow that has come into your family and The medical profession of this country would sincerely sympathize with each one of you. have suffered a great loss by his death were it not for the fact that he has made one of those marvelous provisions of nature in that he has produced, raised, and educated one who can adequately and completely fill his his place in the ranks of the profession. Indeed your father is to be congratulated upon this unusual fate, as well as upon the great achievements he has completed in the advancement of the medical profession as a whole. Will you kindly extend to each of your family my sincere sympathy, as well as accepting a great portion for yourself."

"I am sure I am not the only one who has picked up the recent isue of the Journal and was shocked at the knowledge of your Father's death. You know without my stating how close I held him as a friend and how much I thought of him these many years. Comment at this time and under the circumstances would be out of place. I have only to say I sorrow with you in your great loss, and whilst I feel that I have met a loss, it of course can be nothing compared with what is yours, but with the stress and great sorrow it brings, there is a brighter side which tells us of a life well spent, wonderfully full of doing good in many ways—yes, even more—the burdens of his friends, of his community, and of his state, were constantly his own problems and engaged his time not in a way they would be met by ordinary routine, but from the standpoint of one humanely interested in his fellow-man. No credit or inscription can be greater, no inheritance dearer, and no life better filled than that of his. This is the feeling of those who knew him well and must be the expression of all who understood and loved him as some of us did."

"Please allow me to express my profound sympathy to you and your family in this hour of sadness.

You have lost a devoted Father and the medical profession one of its greatest members.

None knew Doctor J. N. McCormack but to admire him, And, I consider him the greatest benefactor the people of Kentucky

have ever known. I certainly think myself fortunate in having known him. Again expressing my sympathy, I am Sincerely yours."

Miss. Frances Ingram, Neighborhood House, Louisville, Ky.:

"I wish to extend to you my deepest sympathy for the loss of your Father. Your loss is not only the loss of the State, but the loss of the nation. The splendid work of your Father will live after him to the benefit of thousands upon thousands of people."

Dr. Basil M. Taylor, Greensburg, Kentucky.:

Not only the State, but the Nation has lost one of its greatest men and mankind one of its greatest benefactors. Aeeept my sympathies."

Hon. Overton S. Hagan, Williamstown, Ky.

"I note with much regret the death of your father. His loss is not only to his family and friends, but to the entire State.

I desire to express to you and family my deepest sympathy."

Dr. Gaylord C. Hall, Louisville, Kentucky.:

"I learned with great regret of the death of your Father.

For so many years he has meant so much to the profession in the State that it is a loss that we can but ill afford to sustain.

Permit me to extend to you and other members of the family my sincerest sympathy in your great loss."

Dr. W. E. Bartlett, Elkton, Kentueky.:

"I have been thinking of writing you since I learned of the death of your father. Of eourse, I was shocked, but really I was not so much surprised. Though it seemed hard to realize that he could be cut off so suddenly, though I thought I eould see some signs of his failing when I saw him last February. His plaee cannot be filled for the medieal profession not only in Kentueky, but in the whole U. S. A. But isn't it a great eonsolation to know that his whole life was spent (and not in vain) for the medical profession and cause for the relief of suffering humanity and further to know that he died in the harness, worked right up until the end. My father, Dr. J. W. Bartlett, passed away February 9th, 1911, and never shall I forget how often and foreibly have I heard him express his fond admiration and loyalty for Dr. J. N. McCormaek. Though my father was older than your father yet they were thrown together quite a lot in those old pioneer days; are we as good men as our fathers? If not, why are we not? Let us do our best to try to be."

Dr. Peyton Ligon, Seeretary, Henderson County Medical Society, Henderson, Kentucky.:

"Words fail me to express my sineere regret at the death of your father, and the great loss that I feel, that his family and the medical profession, the state and our nation feel it has sustained. All the energy and the power that he possessed, and every influence and aid that he eould bring to bear, have in the past forty years been direeted to our purpose, the saving of human life. In the achievement of this noble purpose he is without a peer in this work, and it stands as monument to his memory, more to be coveted and more enduring than any loving hands could erect. Like the Master he went around doing good, and when his spirit "entered that within the vail", I faney I can hear the Savior say 'Well done thou good and faithful servant, enter into the joys of thy Lord' ".

State Senator White L. Moss, Pineville, Kentucky.:

"You have my deepest sympathy in the death of your father. To my mind, Kentueky has lost its foremost eitizen, as I believe that he has done more for the real benefit of Kentucky, its past, present and future, than all the rest of the state eombined.

You will recall that I made this statement on the floor of the Senate, and when the history of Kentucky is written, the greatest credit will be given your father for the wonderful work he has done. Kentucky has lost a noble son."

Dr. A. M. Lyon, County Judge of Elliott County, Sandy Hook, Ky.:

"My heart bled with sympathy for you and I mourn that Kentueky has lost such a figure in the death of your father. Death is but the castle at the end of the road, where we pause for a moment to shake off the raiment of the mortal and put on the robes of immortality. He was a distinct blessing to his day and generation, and the world is better and brighter that he has lived. Sanitation has lost one of her ablest and most faithful sons. He could touch, seemingly with the divine power, regions infected with contagious and infectious diseases with his great knowledge and organization and they would immediately give way to healthy inhabitants. I shall cherish his memory and the assoeiations with him in the sentiment of the poet

when he said:

"Long, long be my heart with such memiries filled,
Like a vase in which roses have long been distilled,
You may shatter, you may break the vase if you will,
But the scent of the roses will hang round it still.
Peace to his remains. God rest his good soul."

Dr. Austin Bell, Hopkinsville, Ky.:

"I was greatly shocked by your father's serious illness and death, and with all of Kentucky, express my personal loss in his demise and the irreparable loss sustained by the profession, of which he was an honored member. In the mdist of our grief we should derive solace from the many years he devoted to the good of his native state and beloved country and his useful ideal home life. Your mother has my deepest sympathy for I realize that the band of union with them was unusually close. May a just God have mercy on her at this time is my wish and prayer. His long and notable career has plaeed the profession of Kentucky at the front and I trust that you can continue the work you have already undertaken and leave it on as much higher ground as did Dr. J. N. McCormack.

With best wishes for yourself and family, and kindest rememberanee to your mother."

J. W. Cammack, Attorney at Law, Owenton, Ky.:

"Mrs. Cammack and I send you and the family of Dr. J. N. McCormaek our sympathy for the great loss of your father. He was the greatest man in Kentueky. We think that he has done more for humanity than any other American of his day."

Dr. R. T. Hocker, County Health Offieer, Arlington, Ky.:

"I have just read an account of the death of your great and good father. I believe that he did more for the material interests of the world than any other man that ever lived. His work in the interest of health meant more toward inereasing the duration of human life by which a span was added to the length that marks its brevity than any other man. I would be so pleased if his statue with that of Ephraim McDowell could fill Kentucky's two niches in the Hall of Fame at Washington, D. C. In manner he was a Chesterfield. I could not imagine your father being discourteous to any human being. My heartfelt sympathy to the family."

Dr. Jas. Bond, Director Inter-Racial Movement, Louisville, Ky.:

"I was greatly shocked and grieved to read in the Publie Press during my absence from the State a report of the death of your distinguished father. I eounted him as one of my best friends. He was a member of the State Inter-Racial Commission for Kentucky and a member of the Executive Committee of that body. He always made it a point to attend the meetings of the Executive Committee and made valuable suggestions along the lines of better relations between the races and the improvement of the colored people generally along lines agreed upon by the eommission. Please aecept my hearty sympathies for you in the great loss which you have sustained and let me pledge to you the same spirit of cooperation which eharacterized our dealings with Dr. J. N. McCormack whom we all miss so much."

Dr. Merrill Ricketts, Cincinnati, Ohio.:

"The world is better beeause he lived."

State Senator Newton Bright, Eminence, Ky.:

"Please accept my sincere sympathy in your recent bereavement. Kentucky has lost a valuable citizen and you a true and devoted father and eouneilor. He goes to his reward carrying the esteem and admiration of his profession, as well as the esteem and regard of all good eitizens of the state regardless of politics. He leaves to you a rieh heritage in his name and fame which will be of great eomfort to you not only in your present time of sorrow but in years to eome. Again assuring you of my deepest sympathy, I beg to remain."

Dr. J. T. Reddick, Columbia Building, Paducah, Ky.:

"I have just heard of the death of your father and I desire to express my sympathy to the bereaved ones to whom he was so near and dear. Our state has lost the most outstanding, the most conspicuous representative of the medical profession within her bounds. He was preeminently not only a state character but a national eharacter as well, and he will be greatly missed."

Dr. John F. Anderson, 195 College Ave., New Brunswick, N. J.:

"I have only learned this morning of the death of your father, Dr. J. N. McCormaek, and I am writing to extend my deepest sympathy in your loss. As you know, I have

known your father for a great many years, and I have loved him ever since I have known him. His sterling worth, unfailing courtesy, great ability and his delightful personality have endeared him to every one who became acquainted with him. Please accept our sincerest sympathy not only in your personal loss, but in the loss sustained by the State of Kentucky in the death of Dr. J. N. McCormack."

Dr. E. S. Moss, Williamsburg, Ky.:

"Please accept my heartfelt sympathy for you in the death of your father. I know I have lost a life-long friend; the profession, the state and the Nation have lost an honored supporter of everything good for the uplifting of the citizenship of our entire country."

Dr. John A. Wyeth, New York City.:

"I cannot permit the death of your distinguished father to pass without sending you my heartfelt sympathy and my great appreciation of his talent and his long devoted friendship for mself. I hope you are very well, I am."

Mr. Thomas Cooper, Dean, Kentucky Agricultural Experiment Station, Lexington, Ky.:

"It was with great regret that I learned of the death of your father. I wish to extend to you my sincere sympathy. You have been so closely associated with our father in his work that I am sure his death takes from you not only a parent but a real partner in your life work. However, there should be great satisfaction in the knowledge that he has accomplished much for humanity and for the profession and that his name will live afterward."

Dr. P. A. Hart, Murray, Ky.:

"I have just read with deep sorrow of the passing of your father. I wish it were possible to express to you how sincerely I grieve with you in your inestimable loss, but words fail to express fully ones feelings on an occasion like this. I am sure that when I say that the medical profession has lost its Grand Old Man—one who will never be replaced—I am voicing the sentiment of thousands. He has built for himself and his name one of the noblest monuments ever erected to man. Please extend to your mother and family my sincere expression of condolence."

Dr. W. N. Lipscomb, Lexington, Ky.

"Small wonder that the ancients worshipped death—it is the most inevitable and yet often the most surprising of all human fates. The news of your Father's condition was a shock to the State he served so well; the report of his death threw a Kentucky Commonwealth into grief and sorrow.

It is a tragedy to witness the going of a pioneer, a leader in growth, progress, and development, a Father to the medical profession, a powerful factor in state and national health advancement, a man who was a real worker, yet on whom the many years shone with a kindly reflection of the great soul and heart and mind beneath.

'Peace to his ashes!' May the God of all protect him and us and make of him a living faith for men to emulate as long as memory endures and the spirit of service fills the souls of men.

Please accept this in the sincere, consoling spirit in which it is written."

Geo. L. Sehon, State Superintendent of the Kentucky Childrens' Home Society, Louisville, Ky.

"Please accept my heartfelt sympathy in this, your greatest bereavement."

"I regarded Dr. McCormack as one of the truly great men of our State. I shall miss him as he was always so deeply interested in my work and always had some such sweet words of encouragement to give."

Dr. Everett Morris, Chicago, Ill.

"I have just noticed the sad news of your Father's going. From the time I graduated in medicine I have been made to feel his interest through his kindliness to me. I have counted it a joy to have his esteem and I now feel a keen personal loss. Aside from the personal touch of a large group of friends and admirers, organized medicine has lost a fearless champion.

In this hour I share with you in the loss of your Father who was an inspiration to young Kentucky doctor."

Dr. M. W. Hyatt, Springfield, Ky.

"This tardy expression of sorrow and sympathy to you and the family in the death of your Father is due to the fact of several months illness which made me practically an invalid, but even at this late day I want you to know—as I believe he did while he lived—my love and loyalty to him in the past years, in all that he did and attempted to do, though I realize how very little I have done under his leadership to merit his kindness and forbearance.

In his death I feel a poignant grief and sorrow, akin to that of my own, for he was not only a great counsellor and guide to the

profession, but a big and kind father to every honest and God fearing doctor in the state and I know that this sentiment is shared by everyone who knew him and that means all of us. It is we of rank and file who will feel his loss most keenly and miss him most. His quiet but dauntless courage, his devotion to his profession and his people, his purity of purpose may well defy the crucial test of Time and the analysis of the most exacting historian. In all of the reactions of Life he was clothed with all the virtues that win respect and charm the heart; able alike to adorn his profession and his country; willing alike to serve them with his life and with his death. But were I able he needs no encomium from me.

In you, I believe will be found all of the qualities of mind and heart, and the courage to carry on his purposes and aims and to that end in whatever way I can, I will help to the best of my ability."

Dr. J. Tom Price, Harrodsburg, Ky.

"I was surprised and grieved indeed to see an account of your father's death in last night's paper. The "Grand Old Man" the most useful in all in our profesion today, the greatest loss to the multitudes who knew, loved and honored him most of all. My heart is sorely distressed and my sympatheis profound for you and yours. The loving tender companionship between father and son I observed years ago and have often spoken of such happy relations to our friends. You have been blessed above the most of men in such God given relative. I lost my father in my "teens" and never knew such association as you have had, but I have the sweetest association of a dear old mother—the boy's best friend—for forty years. I believe that you are still blessed with your mother and you will be dearer and nearer to her now and she to you than ever. My heart and thoughts are with you. God bless you and yours."

Dr. Lewis Mayers, New York City.

"The news of your father's death brings a sense of cruel loss even to those who, like me, had the opportunity to know him but slightly. What an overwhelming bereavement to you and all who were near to him! I do trust that the blow is softened for you by the thought of his life of splendid service such as is given to few men to live. With heartfelt condolence."

Dr. H. H. Roberts, Lakewood, New Jersey.

"I have just read in the Journal notice of the death of your father. It cannot be estimated, the great loss this is to the Medical profession of America.

To me personally I feel his loss very keenly, for he was always my good friend, always ready to extend a helping hand to advise and counsel the young physician to greater achievements and nobler ideals. I loved him for his great big heart, his true manhood and his wonderful personality. It will be many days before another can take his place in the minds and hearts of this great profession of ours.

With his untiring efforts the Medical Profession of America has been placed upon a higher plain than it would be today without such personal sacrifice as made by him. Please accept my most sincere sorrow with you and yours in the loss of your good father and my friend."

Dr. Oscar Keen, Health Department, Canal Zone, Panama Canal.

"In a recent issue of the Star and Herald I have just read an account of the death of your father. Permit me to expresss to you my sincere sympathy in your bereavement. The death of no man in Kentucky save that of my own father could have given me cause for more genuine regret."

Dr. J. G. Carpenter, Stanford.

My acquaintance with Dr. Joseph Nathaniel McCormack, began in 1879, at the Kentucky State Medical Society, Danville Ky., when the McDowell monument was dedicated by this great body. Dr. McCormack a boyish doctor in appearance, reported a case of intestinal obstruction, with removal of five or six feet of intestines, with recovery of his patient. A wonderful accomplishment in surgery at that date, and even today. And this one deed stamped him as one of the greatest surgeons, the world has ever produced, and placed him in a class with Drs. McDowell, Richard Cowling, Lewis A. Sayre, Valentine Mott, Henry B. Sands, Joseph Price, John A. Wyeth and the great John B. Murphy.

Since 1879, the writer has observed and studied Dr. J. N. McCormack closely, and always found him to be an ideal man, citizen and doctor, also Christian always striving to do the best for humanity and the medical profession. He started right, went right, and ended right, in every thing he did.

His conception of the physician was, that he should be a leader in his community, the cleanest man, morally, spiritually, and intellectually, in it, a leader of opinion and the best cultured, and the time has come, he maintained, when the doctors are to have the

leading part in the destiny of the country. He was an illustrious and able leader. An aphorism of his, was that poverty in the medical profession, is more dangerous to the community than tuberculosis, that a large part of the doctors of this country should go to studying, or quit the practice of medicine and surgery, and the country would be better off, if fifty per cent of the physicians in it, did go out of business.

In Dr. Joseph Nathaniel McCormack the world had its best health officer, he was predestined to be a promoter of great things for public good.

Born to be victorious, great and illustrious, and his name is forever written upon the pages of history. He was a hero of sanitation and public weal, the Sampson of the medical profession, a King David in battle, a benefactor to both friend and foe.

He gave to Kentucky and the world the best laws regulating the practice of medicine, surgery and sanitation. How often he has said to large audiences of medical men, "United we stand, divided we fall," we should be united, happy and rejoicing on the way. He deserves to be classed with Washington and Abraham Lincoln, for Dr. McCormack was also an emancipator, he fought for peace, freedom, from disease and pestilence, and under his administration, epidemics, contagious and infectious diseases were quickly checked and the mortality reduced from fifty, sixty and seventy-five, to five, six and seven per cent. Like the great Lincoln, he was bound to win; bound to be true, and lift up the light he had, he would stand with anybody that stands right, and part with him, when he goes wrong.

The Dr. Jeckyls and Mr. Hydes in politics and the medical profession, and the quacks were always Dr. McCormack's enemies, but he always Dr. McCormack's enemies, but he overcame them, conquered to the utmost, and they passed from view, like melting snow, before the sun. He walked in the foot steps of the Great Physician, always went about doing good, striving to obtain higher, greater and nobler achievements for public good.

He was like St. Paul, taught whatsoever is just, pure, and right, whatsoever is profitable. Think over these things, let the pass word be "always prepared and unity, peace and brotherly love, always prevail in our beloved profession. Hold fast to that which is good and prove all things."

Dr. McCormack was the man and doctor who dared, who did great things and won, all along the line. Of him the poet can say "The man who does is the man who wins," the doctor who makes things hum and buzz, the doctor who works and the doctor who acts, who builds on a basis of solid facts, who does not sit down and dream, who forges ahead with the force of steam.

The sun, moon and stars each have a glory, yet and the firmaments thereof, all declare the glory of God, and so did Dr. McCormack, as the stars, the sun and moon differ one from the other, in size, form, light, beauty, brilliance and granduer, so did Dr. McCormack differ from the other doctors, in industry, erudition, skill, wisdom and professional achievements, sanitation, deplomacy and financial success. Dr. McCormack passing away was like the stars of the morning, losing their light in the glorious sun, so let us, as we pass on, gently, lovingly, peacefully and kindly remember the good he has done.

To me he was my true and tried professional brother and friend, I looked up to him, admired and loved him, as Johnathan did David, and through life, I have tried to have for him the true friendship that Pythias had for Damon.

Dr. Joseph Nathaniel McCormack surely is entitled a prominent place in the Hall of Fame.

DR. R. M. KENDALL, Chairman of Kentucky Board of Examiners of Optometry.

To say of Dr. J. N. McCormack, whose death occurred May 4, 1922, that he was a real friend to optometry and the optometrists is but stating the fact that has been thoroughly proven by his acts and dealings with the Board of Examiners in Optometry since the passage of the law, which gave optometry legal recognition in Kentucky. He placed at the disposal of our Board his years of experience and wise counsel that made possible the success of health work in Kentucky.

As I call to mind the day I first met him, after having been appointed a member of Kentucky's Board of Examiners, I bow my head in reverence to that great champion of organized medicine who, after legal recognition of optometry had been secured, at once became the confidant and counsellor of our Board, as well as the depository and keeper of all our secrets and, in so serving, aided in up-building the profession of optometry in Kentucky.

The memory of his friendship and his unselfishness will forever live with me. In my life I have had the pleasure of making friends with many honorable men but never have I found at truer friend that Dr. J. N. McCormack. He was one of nature's noblemen; a worthy son of an Old Kentucky family, and he always combined loyalty to the State of his birth with a profound interest in the health and welfare of our people; as a

friend, he never shirked a duty toward his fellowman and the minutest detail received the same attention as matters that came before the public eye; in integrity and energy, ability and affability, he was second to none; a gentleman by instinct; his word was better than many a man's bond; in short, he needs neither eulogy nor elegy for his daily life breathed eloquence and harmony.

Where the world's rarest and most magnetic souls have gone, in their presence you will find Dr. J. N. McCormack and I say, believing that I voice the sentiment of our profession at large, that optometry has lost a loyal friend and co-worker.

Dr. J. J. Moren, Louisville.

By the death of Dr. J. N. McCormack the profession has lost its most energetic and loyal member. While our memory of him is fresh, and our loss is felt would is not be becoming of us, as a profession, to establish a suitable memorial?

I know no man who tried to do more for us. No one has spent more years of his life trying to elevate the profession. He had his enemies and friends, as all men who do things have had.

He was a politician, but his labors and purposes required political ability to accomplish his work. He was a clean, capable and honest man. His life can well be held up as an example for others.

As a suitable memorial permit me to suggest a Medical Library with a circulating feature, which will distribute medical knowledge to those men in the State with whom, and for whom he worked.

Dr. B .W. Wright, El Paso, Texas:

"This is the first opportunity I have had to write to you since receiving the message that you could not attend our meeting and the distressing news of your father's death. It would, perhaps, have been some small consolation for you to have heard the expressons of admiration of his life and genuine regret for his sudden death that were universal throughout the membership of the Association where he was so well known.

The members of my family join me in sending you my most sincere feelings of sympathy in your time of bereavement and all love and every possible hope of consolation for your mother."

Mr. McHenry Rhoads, Dean, Graduate School, University of Kentucky, Lexington.

"It is with profound sorrow I read in today's paper of your father's death. He was one of Kentucky's best men and real benefactors of humanity. Sincerest sympathy."

C. M. Fleenor, Bowling Green Ky.

"It is with the greatest regret that I note the illness and death of your father, Dr. J. N. McCormack. I eseemed him most highly and I know that the State will lose deeply in his death. He was my standard of friends, and his friendship was worth much to me. I have missed him from Bowling Green, but regarded him still as a neighbor, for Louisville is not so far away when it comes to the ties of friendship, but now a greater distance lies between.

Convey my sympathies to your wife and mother and I commiserate with you."

John F. Smith, Professor of Rural Social Science, Berea, Ky.

"Instead of telling you that I sympathize with you in your sorrow over the death of your Father, I feel much more disposed to say that I rejoice with you over the fitting close of his useful and triumphant life. The passing of such a man in the way his end came—just out of his work-shop into the casket—seems, to me, more like a glorious sunset at the end of a perfect day. His work was as nearly finished as any man's who devotes a life to service. It doesn't seem like death; its like laying down a heavy burden which has been joyfully borne to enter upon a season of well earned rest.

His life was a succession of unselfish triumphs, and every son and daughter of Kentucky is stronger and healthier because he lived."

Dr. Frank T. Fort, Louisville, Ky.:

"I was never more surprised in my life, that I was, when stepping aboard a train for New Orleans to attend a meeting of the Surgeons of the Illinois Central and Yazoo and Mississippi Valley Railroads to learn of the death of your illustrious Father whom I believe, many medical men loved and revered.

It was certainly a calamity to the city, state and nation for one to be taken from our midst who had done more than any other one man in this country to elevate medicine to its present high standing.

It may be a pittance of consolation to learn that every medical man whom I met in New Orleans gave glowing tribute to the worth of Dr. J. N. McCormack ,in elevating the medical profession of the U. S. A.

With sincerest sympathy to you and your family, I am sincerely yours."

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EDITORIAL

STATE DUES.

It is of interest that the increase of the state dues of the Kentucky State Medical Association to $5.00 has met with the understanding and approval of the medical profession in practically every county in Kentucky. Never before have so many of our members sent in their dues so early in the fiscal year. We feel that this is a recognition of the worth of our medical organization in Kentucky. This state has more nearly preserved the democratic organization brought about under the leadership of the late Dr. J. N. McCormack and his associates in 1900 than any other state. Our House of Delegates, representing as it does every county society sufficiently interested in professional activity to send a delegate to the annual meetings, has a control of professional activities in the state which is only equalled in Alabama and South Carolina.

In many states serious problems arise which divide those physicians who happen to be in control of the public health activities in the state from its practicing physicians. Fortunately this is impossible in Kentucky, because the two are inseparable. Whenever the State Board of Health fails to respond to professional sentiment, it is within the power and it would be the duty, of the State Association to arrange for a change in the personnel of the State Board of Health. Whenever officers of the State Association fail to carry out the wishes, or to put into practical effect the program of the medical profession of Kentucky, the personnel of its list of officers may be changed at any time by the House of Delegates. If there is any activity, or any expenditure of money which is not understood and approved by the medical profession of the State, it may be corrected at any time at any meeting by the House of Delegates. In no other state is there such a detailed financial report given to the membership as is given annually in Kentucky. For eighteen years every penny expended has been printed in the annual number of the *Journal* and sent to every physician who is a member of his county society. It is sometimes asked why our *Journal* costs so much. In reply we will say that page for page is costs less than any other medical journal in the United States. It is larger than most state journals because it publishes every paper read before all of its one hundred and sixteen county societies that are sent in to it. This is not even half true of any other state medical journal. The members of the Kentucky State Medical Association are proud of the fact that in only two years of the past eighteen has it cost anything from the dues paid by the members. Our advertisers have supported the journal, even enabling it to be published at a slight profit to the association, excepting last year when its actual cost to the membership was approximately $1,000. For ten years, all members who have been unjustly accused of malpractice have been defended in the courts. It is proposed to continue this defense. For twenty years the Association has been represented by its legislative committee at the General Assembly in Frankfort, and hundreds of bills which have been offered which would have destroyed the usefulness of the profession to the people of the state have been defeated, and wise legislation which has been a model for other states has been enacted.

Our Commonwealth early recognized that the regulation of those who treat diseases was only of public interest insofar as it secured adequately trained individuals to care for the diseases and defects of our people. For this reason it has always recognized new schools at their beginning, but it has only permitted the members of these new schools who are really trained in the fundamental branches of medical science to practice in the state. It has recognized from the beginning that human anatomy and physiology and pathology are the same in all human beings, and it has restricted the entire examination of those who practice the healing art to these branches.

It is to preserve all these things to the people of Kentucky that its medical organization exists. The laws must be enforced, the people must be enlightened, the members of the pro-

fession itself must be kept informed as to their mutual problems. To do these things requires money, and the dues promptly paid to the State Association, together with its other income from its activities are essential to its very life. The smallest salaries paid by any of the active medical associations in the United States are paid in Kentucky. Our effective councilors do their work at less expense than in any other state, and it is recognized in all the states that our organization is a peer of any. We believe that the medical profession of Kentucky is determined to keep it so, and with this end in view we urge you to send your dues to your county secretary today, and to make up your mind that you propose to be a better member of your county medical society, and the medical profession than you have ever been before.

FEDERAL DEPARTMENT OF HEALTH, EDUCATION AND WELFARE.

In Washington during the war, the best business executives of the country brought the defects of the national administrative system to a public knowledge that had never before existed. Since that time, trained minds have been concentrating on such a reorganization of the federal departments as would enable them to function both more effectively and, what is quite as important, more economically, so that taxes may be reduced. Suggestions along these lines effect practically every department of the government, but we will only consider those which would make changes in federal administration as it effects the public health and allied problems.

In order to do what should be done by the government, it is really a pity we have to consider what has already been done. Most of the federal efforts along public health and educational lines have been haphazard—the result of some movement or craze, and such things must result in lopsided efforts, putting undue emphasis on first this and then that subordinate movement, instead of calmly surveying the entire field, visualizing its needs, and then fitting the machinery of government to their solution.

At the conference recently held in Washington, the Postmaster General, Dr. Hubert Work, recently President of the American Medical Association, and himself one of the most distinguished and successful practitioners of medicine of the country, made a brief statement that was full of real force. He said that it must be recognized that most of the problems effecting both public health and education were matters which could only be solved under the police powers reserved to the states, that the federal functions were relatively small, and that it would not require a large and complicated department to head up these interests in the federal government so that the whole national education and health movement could be coordinated. From Washington there would be control of maritime quarantine to prevent the introduction into the United States of epidemic diseases from without. The other great problem under federal control is interstate quarantine to prevent the spread of disease from state to state along the lines of travel, which are now so important. Besides these, the federal government should, in its laboratories, conduct and encourage investigation in all those things which affect public and private health, especially in the larger problems that are now the causes of ill health in large sections of the country, or amongst considerable portions of the population. They should have a few expert mobile units that may be called into consultation by affected states. Through conferences of state and local officials having a common problem they could help to focus attention with a view to its solution. Upon the invitation of states they could conduct demonstrations of methods for the prevention of disease, especially emphasizing that it was not the function of the federal government to interfere with the treatment of diseases which already exist, that it had nothing to do with the regulation of its practice of the healing art in any of its branches, and never should have.

General Sawyer, the personal representative of the President, stated that it was the present purpose of the committee on reorganization of the federal departments, to recommend to the Congress the establishment of a Department of Education, Health and Welfare, with a secretary in the cabinet, and an assistant secretary, which would consist of four bureaus—education, health, welfare, and the Veterans' Bureau. The problems presented by these four bureaus are naturally inseparable, and the heads of such departments would be a National board of strategy which would help do the things the country needs. It is proposed to transfer to the new department all the existing activities of the federal government—along these several lines just as they are, taking over their personnel and functions, headed up by their technical staffs and chiefs, merely taking them from their present environments, which are frequently entirely inimicable to their successful operation, and putting them where they can work sympathetically together. It is interesting that this same thing has been done

by all the great governments of the world, and it is felt that the United States has lagged along behind the other States in recognizing the importance of its greatest asset, its human beings.

It is inconceivable that there can be any great objection to this program except upon the part of those who are the enemies of progress in government. It is not the purpose of the new department to enlarge the federal functions, nor to interfere with the full and free exercise of the police powers of the states in these respects. It is not the desire to build up a great federal organization, but rather to simplify and concentrate federal bureaus with a view to getting rid of the chaos and duplication that now exists in Washington. The proposed reorganization would decrease the expenses and increase the efficiency of every bureau involved.

It is especially recognized that the United States Public Health Service should be transferred to the new department as it exists, carrying with it its honorable traditions.

At the invitation of General Sawyer, representatives of the medical and health professions from all sections of the country gathered together in Washington in January and it was interesting to see how unanimously and how gratefully they all received this great practical plan for progress in the efficiency of our federal government. It was realized by all those present that the records of the draft has shown that a great percentage of our young manhood and womanhood were growing up into adult life untaught as to the most important problems that would confront them as citizens, unprotected from the most serious defects that could impair their usefulness, and it was the unanimous desire of those present, as we all felt it would be practically the unanimous desire of the whole citizenship of the country, that this movement be carried through to successful conclusion.

To this end, we invite our readers to bring these matters to the attention of the various State medical organizations of which they are members, and especially to the public press, which in this country so largely moulds public opinion, with a view to bringing the attention of the members of the Senate and House of Representatives of the United States the feeling on the part of the public that this great and entirely non-paristan movement which has the approval of the present administration, as it has had of the last three should be put upon the statute books at the earliest possible moment.

THE UNIVERSITY OF LOUISVILLE, SCHOOL OF MEDICINE.

The article concerning the University of Louisville, particularly its School of Medicine, appearing in this issue of the Journal presents a program which marks an epoch in the history of Kentucky medical education. It is a program of which any medical school in America might well be proud.

The State is under an immense obligation to this Municipal School. The School renders a service to the State which cannot be measured in dollars and cents. The State should show its appreciation by giving the School unqualified moral support and should perfect a program by which financial aid could be given also.

The State Board of Health and the State Medical Journal have every confidence that the University authorities can and will carry out their program. Every alumnus of the five old schools, wherever he is located, and every doctor in this State, whatever his school affiliation has been, should pledge his moral and financial support to this program.

So far as the State Board of Health and the Kentucky Medical Journal are concerned, they hereby announce that they will support the University of Louisville without reservation in its announced program for its School of Medicine.

Dr. I. N. Bloom.

From time to time it is necessary for the Journal to note the passing of members of the Kentucky State Medical Association, who have been faithful servants both of it and the public.

No man who has passed to the Great Beyond in recent years has left behind him a more difficult place to fill than left by Dr. I. N. Bloom of Louisville. Limiting his practice, as he did, to a specialty which is poorly taught to most medical students and for this reason largely neglected by the busy and general practitioner, Dr. Bloom probably did the largest consultation practice in the State. He was accurate in his diagnosis, painstaking and zealous in his therapy, and became the appreciated friend of those whom he served.

If this were all that might be said of Dr. Bloom it would hardly distinguish him from the great mass of the physicians of Kentucky. But, besides and in addition to his purely professional work, he was a public servant with broad vision, with the unusual ability as a leader to see his visions made practical

realities. For many years he was President of the School Board in Louisville and it is no disparagement of his associates to say that he was its leader. Few city school departments have shown more rapid progress in the proper education of childhood than has that of Louisville during his term of office. Known and loved almost universally by the citizenship of the city, those who never knew him were benefitted by his quiet, persistent, unobstrusive public service.

It is for this reason that we feel that in Dr. Bloom's death there has occurred an unusual loss both within the profession and to the State.

SCIENTIFIC EDITORIAL

A PLEA FOR EARLY CELIOTOMY IN PERFORATING ABDOMINAL WOUNDS.

The advancement toward perfection in the technique of abdominal and pelvic surgery, together with the greater percentage of successful ultimate results which are more or less directly attributable to that fact, disprove the correctness of many dicta held inviolable by some of the older surgical writers. And, in passing, it is also interesting to observe that certain anatomic regions which were *terra incognita* a few decades ago have been surgically explored and are now well understood anatomically and functionally.

The principle object of this contribution is to emphasize the imperative demand for early surgical exploration, as a life-conserving measure, in every instance where an individual has sustained a perforating abdominal wound, regardless of the immediate local or general symptoms which may be manifested.

The pertinent facts must not be permitted to pass unobserved; (1) That the initial symptoms following both perforating and nonperforating abdominal injuries may be misleading; (2) That if visceral damage has been inflicted operative delay means a fatal termination in nearly one hundred per cent of instances: (3) That exploratory celiotomy carefully executed by a competent surgeon is practically devoid of clinical risk.

Every practitioner of medicine is doubtless familiar with prevailing text-book advice (which is, fortunately, gradually becoming obsolete) to "await the appearance of indicative symptoms of visceral injury following abdominal trauma" before resorting to operative treatment. In the light of present surgical understanding no teaching could be more pernicious in its significance. To await symptoms positively indicating visceral damage is merely courting disaster, and, as a rule, such delay means a fatal termination; whereas, carefully executed exploratory celiotomy with repair of injury inflicted upon the internal structures means the conservation of human life, and the latter is obviously the object sought to be obtained by every surgical procedure recommended or undertaken.

Perforating abdominal wounds may be inflicted by a variety of agencies externally applied, but by far the most common are knives and firearms. In wounds below the umbilical level the character and extent of internal injury may bear no relationship to observable surface evidence. The viscera situated above the umbilicus sometimes escape serious injury despite the passage of bullets entirely through the body. For reasons which are well understood intestinal and splenic damage is likely to be more extensive following lateral than anteroposterior wounds.

Unfortunately there are no pathognomonic local or general early symptoms indicative of visceral damage, and for that reason accurate pre-operative diagnosis is seldom practicable. Instances have been recorded where, following bullet of knife wounds which penetrated the abdominal cavity, no early symptoms developed to suggest visceral injury, and in consequence exploration was delayed "awaiting symptoms" until the "golden opportunity" for conserving life had passed. When indicative signs finally appeared celiotomy disclosed numerous intestinal perforations from which leakage had occurred and the patient promptly succumbed to general peritonitis. Such fatalities are, for the most part, preventable.

In the light of existing knowledge it would seem the height of surgical wisdom (with certain reservations), when confronted by an individual who has sustained a perforating gunshot or knife wound of the abdomen, to perform immediately exploratory celiotomy to determine the presence or absence of internal injury. Prompt operative intervention under such circumstances with repair of visceral damage if such has occurred, constitutes a life-saving measure which no conscientious surgeon can longer afford to ignore. Of course, if the patient exhibits evidence of profound shock and is in a state of collapse, proper treatment should be instituted to overcome these conditions, such as the intravenous introduction of saline solution, the application of heat, the administration of morphine, caffeine, etc. These methods of treatment, however, should not be continued longer than a few hours. When the patient has sufficiently reacted to safely withstand surgery, the operation should be performed.

An important item, in this connection, is the time which has elasped between the infliction of injury and the operation. Natural-

ly the earlier exploration is undertaken, provided visceral damage has occurred, the greater the chance of an ultimate successful outcome. It is a rule, to which, however, there have been some notable exceptions, that visceral wounds eventually prove fatal. Therefore, regardless of the time intervening between injury and surgical observation unless the patient is actually moribund, immediate exploration is imperatively demanded in the hope of conserving life. This statement applies with greater force to wounds of the lower than the upper abdomen.

In recapitulation the following propositions seem especially pertinent:

(1) That in penetrating gunshot and knife wounds of the abdomen, immediate exploratory celiotomy should be performed;

(2) That accurate diagnosis of the extent and character of visceral damage is seldom practicable based upon existing symptoms;

(3) That carefully executed exploratory celiotomy is practically devoid of clinical danger;

(4) That conservative or non-operative treatment is attended by practically one hundred per cent mortality where extensive visceral damage has been inflicted.

Charles A. Vance.

NOTES ON THE TREATMENT OF SKIN DISEASES.

The treatment of cutaneous affections may be divided into: (a) internal, and (b) local. The internal treatment consists in regulation of diet and the administration of drugs. Dietary regulation is important in all skin diseases, and is an absolute necessity in some. Plain, wholesome food may generally be allowed, but all highly seasoned, fried and salted articles should be avoided. Sweets, in the forms of candies, cakes, etc., often aggravate skin lesions. Preparations of oatmeal and bran which contain alcohol tend to render inflammatory affections acute and must be enjoined.

Of the drugs employed in the treatment of skin affections, arsenic is used to a greater extent than all others combined. The reminder seems pertinent that in practically all acute inflammatory skin diseases arsenic is contraindicated; it usually causes the skin to become "itchy" and aggravates existing lesions. However, in chronic skin diseases, such as psoriasis, lichen planus, dermatitis herpetiformis, eczema and certain other rarer affections, the drug may be administered with decided benefit. Arsenic should always be given after meals; and general disorders, such as constipation and indigestion, should be corrected before prescribing the drug to secure its best effects. The practice of giving some preparations containing arsenic in every skin disease is to be condemned.

When indicated arsenic is usually administered in the form of Fowler's solution, "Asiatic pills," or cacodylate of sodium. Fowler's solution may be given in three drop doses t. i. d., increasing the quantity one drop at each dose until the point of tolerance is reached, or in flat doses of seven to ten drops t. i. d. after meals for a given time. The appearance of toxic signs will naturally suggest discontinuance of the drug. The "Asiatic pill" contains 1|20 grain of arsenious acid, and may also be administered in increasing doses to the point of tolerance. Cacodylate of sodium is given either subcutaneously or intravenously. It is distributed in sterile ampoules and may be safely administered intravenously in doses of from one to fifteen grains. This is decidedly the best form in which to give arsenic. Sodium cacodylate contains forty-six per cent of arsenic and the toxic effects are slight. The drug produces a "blackish" taste in the mouth and offensive odor to the breath, and when given intravenously these signs are noted immediately.

Salol may be useful as an intestinal antiseptic in certain skin diseases where gastro-enteric symptoms are more or less constant. Antipyrin is given to control itching in urticaria, prurigo, eczema, lichen planus, senile pruritus, etc., and is of value in certain cases. It will sometimes relieve the pain of herpes. Quinine, besides being used as a tonic is beneficial in urticaria, furunculosis, lupus erythematosus, etc. Diuretics play an important role in many skin diseases, both acute and chronic, the best of which is pure water.

Local treatment is used in skin diseases to cleanse the affected area, to give temporary relief from itching, and as a curative measure. The local bath stands first as a cleansing agent in removing scales, crusts, and other secretions. Distilled water is best as it is neutral in reaction and should always be used if procurable. Oil is employed where water is irritating, and either may be medicated if desired. Soaps are used for both medicinal and cleansing purposes, green soap is especially useful in removing scales. Poultices composed of bread or linseed meal are employed as a soothing agent and to allay inflammation. However, they are apt to do more harm than good, acting as culture media for micro-organisms. Wet dressings of boric acid or saline solution are preferable. Bandages lightly applied are sometimes beneficial. In varicose ulcers where used to sup-

port a dilated vein they must be snugly applied to afford the necessary protection.

Ointments are extensively employed in skin diseases. They all have for their basis fatty material, such as vaseline, benzoated lard, lanolin, olive oil, cold cream, etc. In character ointments are soothing, astringent, antiseptic, stimulating, and parasiticidal. Soothing ointment is applied to protect the skin from air and moisture; cold cream is most useful for this purpose. Astringent ointments are soothing as well as astringent, and consist for the most part of zinc oxide, boric acid, stereate of zinc, etc. Antiseptic ointments are applied in pustular skin diseases, and are composed of mercury, carbolic acid, salicylic acid, ichthyol, sulphur, etc. Stimulating ointments are most useful in chronic skin diseases, and consist of tar and its derivatives, oil of cade, oil of birch, carbolic acid, naphthol, chrysarobin, pyrogallic acid, and various forms of mercury, the percentage of each depending upon the amount of stimulation desired. These ointments are usually rubbed well into the skin twice daily.

Lotions are employed in practically the same manner as ointments. Soothing astringent, stimulating and anti-pruritic lotions form a large and important class. Soothing lotions are used principally in acute inflammatory skin diseases. Stimulating and antiseptic lotions contain mercury, carbolic acid, tar, menthol, sulphur, silver nitrate, and are useful in chronic diseases, such as psoriasis, acne vulgaris, and eczema. Astringent lotions are indicated only in hemorrhage, and are composed of tannic acid and alum. Antipruritic lotions depend for their effect upon tar, menthol, carbolic acid, salicylic acid, and benzoic acid.

Dusting powders are sometimes beneficial in keeping the surface dry, and they also have astringent properties. Rice starch and talcum combined with boric acid or zinc oxide makes an excellent powder. It may be placed in gauze bags and used to separate inflamed parts, or dusted on the surface. However, where the exudate is profuse the resulting crusts are undesirable.

Parasiticides are destroyers of both animal and vegetable products. Sulphur, naphthol, and balsam of peru, are useful in scabies; fish berries, kerosene, mercury (blue) ointment and larkspur are used in destroying pediculi.

Caustics are employed principally for the removal of new growths. Arsenic is of value as it has a selective action on diseased areas, but this drug should not be applied over large surfaces. Silver nitrate and caustic potash belong to the same class. The latter especially must be used with caution as it penetrates into normal tissues. Acid nitrate of mercury and nitric acid are good superficial caustics, and may be employed to remove warts, moles and small epitheliomata.

The roentgen-ray and radium are now being extensively used in the treatment of various skin lesions, particularly epitheliomata, warts, moles, nevi, keloid formation, etc. Application of the roentgen-ray will often relieve itching which accompanies many skin diseases. The high-frequency current is also used.

William J. Young.

OFFICIAL ANNOUNCEMENT

THE UNIVERSITY OF LOUISVILLE SCHOOL OF MEDICINE.

By Stuart Graves, Acting Dean, Louisville.

Changes which will immediately improve the University of Louisville, especially its School of Medicine, and which are pregnant with promise of future strength and development, have just been announced. These improvements may be listed as follows:

1. The organization of the whole University on a real university basis with closely correlated departments under the general administration of a Chancellor, a President and a University Council and Deans, nearly all of whom are salaried men giving all or practically all of their time and energy to their duties.

2. A new agreement between the authorities of the City, charged with the responsibility for the welfare of the Louisville City Hospital, and the authorities of the University, charged with the responsibility for the welfare of the Medical School, whereby the business side of the hospital is placed under the direction of a business manager directly responsible to the Board of Public Safety and the professional side of the hospital is placed under the direction of the authorities of the Medical School directly responsible to the Board of Trustees of the University and through them to the Board of Public Safety of the City.

3. Changes in personnel and organization in all the Schools of the University whereby the general plans indicated may be developed as rapidly as possible toward the greatest efficiency.

4. An architectural survey of the Medical School building and an administrative survey of the Medical School curriculum with a view of making the most of facilities at hand to the end that the largest number of well trained physicians of most desirable character and personality may be produced for the State of Kentucky, not with curtailed preparation or abbreviated training, but rather with preparation and training which meet every requirement of the Association of American

Medical Colleges and the Council on Medical Education and Hospitals of the American Medical Association. These standards are legally necessary in order that the graduates of the Medical School of the University of Louisville may be entitled to take State Board examinations for licensure throughout the United States, as its graduates are now, and in order that the School may strengthen its rating as an A class school. For these purposes the five old schools were amalgamated fourteen years ago. With this object in view progress has been made as rapidly as funds have permitted. Any other course means the degrading of the School to Class B and the consequent closing of its doors.

6. A systematic, thorough study of selected schools and hospitals within attainable distances in order that the best features of such schools and hospitals may be brought to Kentucky.

7. The thorough establishment of a policy of service to the people and hospitals of the State of Kentucky as well as of the City of Louisville. This includes a tentative program for the development of the School of Nursing and the School of Public Health.

8. The establishment of standards and system whereby appointments and promotions in the faculty of the Medical School as well as in the staff of its teaching hospital (the Louisville City Hospital) will be made only on the basis of service rendered to those institutions whose interests are identical: Viz., (1) best to care for the Hospital patients, who are wards of the City; (2) best to educate physicians, surgeons and nurses, who are to care for the sick and prevent sickness, largely in the State of Kentucky; (3) to stimulate and patronize real medical research.

9. The development of a pride and morale in the student body which will build character, courtesy and courage as well as technical skill.

10. The acquisition of a suitable endowment fund to care for immediate needs and to provide for future development.

11. The education of the people of the State of Kentucky to the importance of a first class Medical School for their own sake, to co-operate with the State Board of Health for the relief of disease and suffering in the most remote corners of the State in so far as that is possible.

12. The adoption and maintenance of a policy of harmonizing the most desirable of the ideals and personnel of the old schools of honored memory which were merged into the present school. This is the oldest medical school extant west of the Alleghenies. The purpose of the present authorities is to make it second to none east or west of the Alleghenies and to make the whole University the ranking Municipal University in America. This is the purpose in which any unselfish person may submerge all personal controversies.

13. The development of a compact and loyal Alumni Association, the development of the Alumni Reunion and Clinic Week at Commencement and the development of the Alumni Bulletin.

14. The eventual establishment of a Post-Graduate Medical School which will utilize the clinical material and staff services, not only of the Louisville City Hospital, but of the best of the private Louisville hospitals which may decide to affiliate with the University in this very desirable undertaking.

15. The development of the Summer School, particularly for the benefit of the secondary school teachers. This will be worked out by the authorities of the University of Louisville and the Louisville Board of Education through an administrative board representing both institutions.

16. Tentative plans for the establishment of night courses in the College of Arts and Sciences, for the particular benefit of the residents of Louisville who cannot attend the regular sessions during the day.

It is not possible within the scope of this article, which is requested by the editor of the Kentucky State Medical Journal, to deal with all the details of the program outlined. Briefly some headings may be discussed for the information of the profession of the State and the Alumni of the amalgamated medical schools in particular.

THE UNIVERSITY ORGANIZATION.

The organization of the University of Louville has been effected through the election by its Board of Trustees of the following: Chancellor, John L. Patterson, A. M., Litt. D., LL. D., Professor of Education and formerly Dean of the College of Arts and Sciences; President, Mr. A. Y. Ford, A. B., formerly President of the Board of Trustees; University Council—the Chancellor, President and Deans of the Schools, ex-officio, and representatives elected from each school. The personnel of this Council at present includes: Chancellor Patterson; President Ford; College of Arts and Sciences— Warwick Anderson, S. B., Professor of Physics and Acting Dean; B. M. Brigman, S. M., Professor of Engineering and Drawing; Earle B. Fowler, A. B., Ph. D., Professor of English and Secretary of the Graduate School; School School of Medicine—Henry Enos Tuley, M. D., Dean* and Professor of Pediatrics; Stuart Graves, M. D., Professor of Pathology and Bacteriology and Acting Dean; A. W. Homberger, S. M., Ph. D., Professor of Chemistry;

*Dean Tuley is on indefinite leave of absence on aeconnt of ill health and is spending the winter in Florida.

School of Law—Charles B. Seymour, LL. B., Dean and Professor of Law; E. J. McDermott, A.B., LL.D., formerly Lieutenant Governor of the State; School of Dentistry—Henry B. Tileston, M.D. D.D.S., Dean and Professor of Special Dental Pathology and Care of Children's Teeth; William M. Randall, D.D.S., Professor of Prosthetic Dentistry and Technics.

The University Council meets monthly with the Chancellor as chairman and Professor Brigman as secretary. It considers all general policies of educational development and acts in an advisory capacity to the University Board of Trustees. Standing and special committees are working on many important matters and have under consideration a very ambitious and comprehensive program.

The Board of Trustees has just concluded a six-cornered deal whereby it has acquired a tract of approximately forty-eight acres in the south-central portion of the City, to be the site for new buildings for the College of Arts and Sciences. It has transferred about eight acres to the Louisville Baseball Company, a part of the consideration for the conveyance being that the Louisville Baseball Company shall erect on the property a steel and concrete stadium which the University may use as an athletic field and stadium. The Louisville Baseball Company has already begun its improvements which will cost a total of $200,000.

Negotiations are under way for securing a Director of Athletics and Physical Education to work under a special committee on Athletics from the University faculty.

THE CITY HOSPITAL.

Under the new agreement with the City administration all appointments to the professional staff of the City Hospital will be made by the Board of Public Safety on recommendation of the Dean of the Medical School, approved by the Hospital Staff Executive Committee. This Hospital Staff Executive Committee, advisory to the Hospital Superintendent and to the Staff Executive, has been organized ex-officio as follows: The Superintendent of the Hospital, Mr. Henry P. Reager; the Dean of the Medical School, Dr. Henry Enos Tuley; the salaried Professor of Medicine, Dr. John Walker Moore, who thereby becomes Director of the Medical Division; the salaried Professor of Surgery, Dr. Fred W. Rankin, who thereby becomes Director of the Surgical Division; the salaried Professor of Pathology, Dr. Stuart Graves, who thereby becomes director of the Laboratory Division; Dr. James W. Bruce, becomes assistant in Pediatrics, chosen by the Board of Public Safety from the Staff after consultation with the President of the University and the Acting Dean of the Medical School.

The purpose of this organization is to concentrate executive responsibility in a compact group of specially trained men who give practically all their time to the Hospital service and teaching. It will not in any way detract from the dignity, responsibility or service of the clinical professors who will continue to visit and hold their clinics as before. Rather it will improve for such clinical teachers and visiting doctors the working conditions in the hospital and render their service pleasanter and more profitable to them as well as to the hospital and students. This policy is in harmony with the usage prevalent in practically all of the best medical schools in this country and conforms to the progressive development of relations between the best schools and hospitals of America and England. Under this agreement the director of the medical division or the director of the surgical division—both salaried professors in the Medical School—is to be ex-officio executive of the hospital professional staff. Dr. John W. Moore, Professor of Medicine and Director of the Medical Service, has been designated as the first Staff Executive. The records of the directors of service and the Hospital Staff Executive Committee follow:

Henry P. Reager, Superintendent, (Business Manager), a successful business man of Louisville, of executive ability and progressive ideas.

Henry Enos Tuley, Dean and Professor of Diseases of Children, M.D., University of Louisville, 1890; M.D., Kentucky School of Medicine, 1894; Interne New York Infant Asylum, 1891-1892; Sloane Maternity Hospital of New York and New York Cancer Hospital, 1892; Clinical Assistant in Medicine and Lecturer in Physical Diagnosis, Kentucky School of Medicine, 1893-98, Professor of Obstetrics, Kentucky University 1898, and University of Louisville, 1913; Dean and Professor of Pediatrics, University of Louisville, since 1914; Secretary Mississippi Valley Medical Association 1898-1922; Ex-Chairman Pediatric Section, American Medical Association; Fellow American College Physicians; Superintendent Louisville City Hospital, 1917-1922; President, Mississippi Valley Medical Association, 1922.

Stuart Graves, Professor of Pathology and Bacteriology, Pathologist to the Louisville City Hospital; M.D., Syracuse University College of Medicine, 1911; Pathological Interne, Rhode Island Hospital, 1911-1912; Pathological Interne and Second Assistant in Pathology, Boston City Hospital, 1912-1913; First Assistant in Pathology, ibid., 1913-1914; Professor of Pathology and Bacteriology, University of Louisville Medical

School since 1914; Pathologist, Louisville City Hospital, since 1914; Acting Assistant Surgeon, U.S.P.H.S., 1918-1920; Member American Association Pathologists and Bacteriologists, American Association of Immunologists, American Association for Cancer Research, American Medical Association, Councilor of International Association of Medical Museums, Fellow of American College Physicians; member Medical Advisory Committee to Kentucky State Board of Charities and Corrections; Acting Dean, University of Louisville Medical School, 1922-23.

John Walker Moore, Professor of Medicine; B.S., Davidson College, N. C., 1906; M.D., University of Pennsylvania, 1912; Interne Episcopal Hospital, Philadelphia, 1913-1915; Instructor in Pathology and Bacteriology, University of Louisville, 1915-1917; Major, M.C., U.S.A., as laboratory officer to Hospital Center, Nantes, France, 1917-1919; full-time instructor in Medicine, University of Louisville, 1919-1920; Professor of Medical Research, 1920-1922.

Fred Wharton Rankin, Professor of Surgery; A.B., Davidson College, 1905; A.M., St. John's College, 1913; M.D., University of Maryland, 1909; Resident Surgeon, University Hospital, Baltimore, 1909-1912; Assistant Demonstrator Anatomy, University of Maryland, 1913-1916; Associate in Surgery, University of Maryland, 1913-1916; Section on Surgery, Mayo Clinic, 1916-1922; Major, M. C., U.S.A., (1st Army Corps.), A.E.F.; Fellow of American Medical Association; member of Minnesota State Medical Society; member of Southern Minnesota Medical Society; Fellow of Southern Surgical Society; Fellow of the American College of Surgeons.

James W. Bruce, Assistant in Pediatrics; A.B., Yale University, 1907; M.D., University of Pennsylvania, 1912; Resident Physician Louisville City Hospital, 1914-1915; Assistant in Medicine, University of Louisville Medical School, 1914-1920; Assistant in Pediatries, University of Louisvile Medical School, 1920-1923.

MEDICAL SCHOOL AND CITY HOSPITAL.

The conception of the agreement between the University and the City is set forth in the concluding paragraphs, as written by President Ford and approved by the Mayor and Board of Public Safety:

"It is recognized that the relations which have existed between the Louisville City Hospital and the University of Louisville during the last few years have proved of increasing mutual benefit and those relations are hereby continued except as otherwise herein they are altered, although such relations may be changed if deemed wise by the Board of Public Safety on reasonable notice after conference with the University representatives.

"The plan provided by this agreement conceives of the Louisville City Hospital as conducted by the City primarily for the benefit of the sick and needy. To that end every activity of both business and professional staff must be directed and every other purpose subordinated. This fundamental idea furnishes a ready test for settling all sincere differences between the administrative and professional branches of the Hospital service. Cooperation will be promoted by frequent, regular conferences, which shall be arranged between the Staff Executive, the Superintendent of the Hospital and the Dean of the Medical School. If possible any differences should arise which cannot be settled in such conferences, then the Staff Executive shall report formally to the Dean and the Hospital Superintendent formally to the Board of Public Safety for final adjustment."

The favorable impression of this reorganization has already been felt in the application for interneships. Sixty-five inquiries and thirty-six bona fide applications have been received from fifteen of the best medical schools for the seventeen junior (fifth year) interneships. Most of the appointments have been awarded.

A paid director of the out-patient department and additional workers in the Social Service Department will be engaged as soon as the right people can be found.

PERSONNEL AND ORGANIZATION.

In the clinical faculty one assistant only in surgery has resigned. No one has been asked to resign. No one will be if he gives reasonably good service. The clinical faculty will remain practically as it is, except for the additions announced. In addition to the new men in medicine and surgery, a Professor of Gross Anatomy, to be second to the present head of the anatomy department, and an Assistant Professor of Pathology and Bacteriology have been engaged for the next school year. They and their records follow:

Professor of Gross Anatomy: Sydney Evans Johnson, University of Washington; A. B., 1913 M. S., 1914; Northwestern University, Ph. D., 1916, M. D., 1922; University Fellow, Northwestern, 1914-1916; Instructor in Anatomy, Northwestern University Medical Sochool, 1916-1919; Associate in Anatomy, Northwestern University Medical School, 1919-1922; Assistant Professor of Anatomy, Northwestern University Medical School, 1922-1923; Member American Association of Anatomists, Chicago Medical Society, American Medical Association.

Assistant Professor of Pathology and Bacteriology, Harry M. Weeter, A.B., Allegheny College, 1911; M.S., University of Illinois,

1917; Ph. D., University of Chicago, 1922, Assistant in Dairy Bacteriology, University, 1917-18; special Dairy Bacteriologist, U. S. Bureau of Chemistry, summer 1918; postgraduate work in bacteriology, University of Chicago, and Assistant, Associate and Instructor in Hygiene and Bacteriology, University of Chicago and Rush Medical College, 1918-1922; member of Phi Beta Kappa and Sigma Xi; Adjunct Professor of Bacteriology and Pathology, University of Louisville, Medical School, 1922-23.

Other important additions to the faculty in medical sciences will be announced soon.

BUILDING AND CURRICULUM.

Re-arrangement of the interior of the Medical School building is being planned by Mr. J. C. Murphy, architect, which will allow next fall a maximum of seventy (70) first year students and sixty (60) in each of the upper classes, a total of two hundred and fifty (250).

The curriculum of medical schools is the subject of intensive study just now by medical school authorities everywhere. The curriculum of this school will be carefully studied for at least one year before any material changes will be even considered.

STUDENT BODY.

An Upper Class Medical Student Council has been functioning since last fall in a very satisfactory manner. Each fraternity and the non-fraternity men are represented by a Senior and Junior of their own choosing. The Council meets monthly. The chairmanship rotates each month. The secretary for the year is the non-fraternity Senior, chosen unanimously by the fraternity representatives. Every other month the session begins with a dinner and is held in conjunction with a Faculty Committee on Student Affairs, consisting of Dr. Philip F. Barbour, Dr. Moore, Dr. Homberger and Dr. Graves.

Plans are in formation for an upper class honor society, for which scholarship, character, mental capacity, personality and deportment will be the deciding qualifications. Several prizes have been established and more are needed.

It has been decided to select hereafter for members of the entering first year class, not students whose paper credits are satisfactory and filed first, but students whose character and personality, as well as their scholastic standing, give promise that they will be most desirable men for candidates for the medical degree. With this in mind plans are being laid to investigate the home life and preparatory school records of each applicant. The excess of students makes early application desirable.

ENDOWMENT FUND

Plans for this fund are under way and are meeting with distinct encouragement. This matter is entirely in the hands of the President and Board of Trustees so far, but will be developed soon to reach alumni and citizens generally as well as other sources of revenus. If all signs do not fail the University and its Medical School will be suitably endowed within a reasonable time. At present additional funds from the City and student fees provide increased revenue.

THE POST-GRADUATE SCHOOL.

A letter from the Council on Medical Education and Hospitals this winter states that the amount and variety of clinical material in the Louisville City Hospital is sufficient not only to meet amply the requirements for a first class under-graduate medical school, but to warrant serious consideration of the establishment of a post-graduate medical school in due time.

The City has asked the University to assume responsibility for the professional service in the City Hospital throughout the whole year. It is necessary and desirable that the City Hospital Staff should be made up largely from the School faculty. Some so-called "non-School men" have always had a grievance in this matter, possibly with justification in some cases. The policy of the University in the future will be to utilize in the City Hospital any desirable doctor who is willing to meet responsibility there with ability and faithfulness. It is to be hoped there will be no more "School men" as differentiated from "non-School men." The University wants for the City Hospital the services of the best of the able, ethical physicians of good standing in Louisville.

A new St. Joseph's Hospital and a new Baptist Hospital, about to be constructed, the improved and enlarged Jewish and St. Anthony's Hospitals, as well as the other hospitals in town, might offer facilities for post-graduate teaching which would be a distinct public service as well as a most stimulating influence for high standing upon those hospitals and their staffs. For this purpose an affiliation with the Medical School would be for the good of all concerned. Co-operation in training of nurses, with the facilities of the University at the disposal of the affiliated hospitals, would be not the least important feature of such an arrangement.

This outlines as briefly as possible the changes which have taken place this fall. The reaction on the part of the public in Louisville has been favorable. The Mayor has stated that the administration is very well

pleased with the arrangement. The Board of Public Safety is working whole heartedly with the new arrangement because it believes that the arrangement is giving the best service ever given to the City Hospital. The Board of Trustees of the University is solidly behind the program. The Medical School has an excellent faculty, sound to the core, which may be depended upon to do the right thing when they are thoroughly conversant with all the facts. The policy of the School administration is to consult with the faculty. Every step so far has been approved unanimously by the Executive Committee of the medical faculty appointed last fall by the Board of Trustees after a secret preferential ballot mailed deliberately by the members of the major faculty to the President, who is authority for the statement that the appointments conformed to the expressed wishes of the major faculty. This Executive Committee consists of Dr. Henry Enos Tuley, Dean; Dr. Samuel G. Dabney, Professor of Diseases of the Ear, Nose and Throat and Clinical Diseases of the Eye; Dr. Philip F. Barbour, Professor of Pediatrics; Dr. Irvin Abell, Professor of Principles and Practice of Surgery and Clinical Surgery; Dr. William A. Jenkins, Clinical Professor of Medicine; Dr. A. W. Homberger, Professor of Chemistry; Dr. Stuart Graves, Professor of Pathology and Becteriology.

Finally, the final copy of this article has been approved by the Chancellor and President of the University, the Executive Committee of the Medical School and the Board of Public Safety of the City of Louisville.

To the Editor—I am endeavoring to make a complete study of the distribution of human actinomycosis in this country. The number of cases reported in the literature is surprisingly small, and I know that the disease is not so rare as is sometimes thought. I shall greatly appreciate hearing directly from any one who has had experience with this disease, and desire to know concerning case histories the following: Age, sex, occupation, residence, state in which the disease was contracted, location of lesion, duration of symptoms, and any special points of interest connected with the treatment, outcome of the disease, or necropsy findings.

A. H. SANFORD, M. D., Mayo Clinic
Rochester, Minnesota.

Eosinophilia in Stomach Content.—Bonorino Udaonda found local eosinophilia pronounced in the six cases of achylia tabulated. In all there was some grave organic disease. The findings were constantly negative in transient or persisting functional achylia.

ORIGINAL ARTICLES

SYMPOSIUM ON PNEUMONIA

Broncho Pneumonia, Diagnosis And Treatment*

By J. H. Pritchett, Louisville.

Broncho Pneumonia is preeminently a disease of infancy and childhood. Statistics show that 75 to 80% of such pneumonia occur in children under six years; or in the ratio of three to one as compared to the lobar type. This is due to the fact that in the young child there is a greater relative abundance of loose connective tissue in the walls of the bronchi and alveoli that the blood vessels in this connective tissue are but loosely supported and are the more ready to become dilated, add to this the poor resistance, especially following contagious diseases. According to various text books [1] and [2], there may be several types. Sufficient, however, is it to say that there are two types, primary and secondary.

A pure broncho pneumonia of primary origin is rarely encountered in clinical experience [3]. The secondary form is by far the more commn, occuring as a complication, or a sequelae of bronchitis, measles, pertussis and other diseases.

Diagnosis.

The diagnosis of broncho pneumonia contrary to the statement of some text books is not always an easy matter, in fact frequently is it a very difficult task to differentiate between this and some of the following, bronchitis, lobar pneumonia, appendicitis, pyelitis and tuberculosis. The fact should be emphasized that often physical signs will be of little aid in diagnosis; however, even without these signs when there exists several of the following, fever, overaction of the ala nasi, rapid respiratory effort with a pause at the end of each inspiration, the so-called inspiratory grunt and a rapid pulse. Let us discuss some of the most common and important symptoms. An infant or child has been ill two or three days with a rhinitis or bronchitis, or possibly just in the midst of convalescence from some contagious disease, suddenly or gradually the symptoms increase in severity, there is cough which is dry, hard and unproductive at first and evidently causing the child pain, the temperature increases and may be 105 or so and remittent, the pulse is much accelerated possibly 150, the respiratory rate increases and may be fifty or sixty or at the rate of one, two or three with the pulse rate. There is prostration, there is lividity or

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cyanosis which may be marked. The facial expression is dull and the child may be oblivious to his surroundings, this is in contrast to the lobar type. There are times when the child seems better for a while only to relapse into lethargy, the appetite is poor. There is asthenia, the course is ill defined, may last two to three weeks ending by lysis.

The above protrays an average case. On the other hand the onset may be very sudden and severe with extreme toxemia, labored and difficult respiration, and the child literally drowning in his own secretion. Fortunately these cases are rare; again we see cases which we suspect as broncho pneumonia but there are no definite symptoms or physical signs for several days.

Physical Signs.

Inspection shows the cyanosis which is practically always present to a greater or less extent, the rapid respiratory rate, dilatation of the ala nasi. Percussion usually small areas of consolidation are made out, bilateral most frequently at the base of the lungs. Auscultation rales which may be fine, coarse, moist intermingled; these are found scattered over the chest particularly over the consolidated areas is heard bronichial breathing. The small areas of dullness may coalesce and the physical signs may change, in fact we may find signs of consolidation in a certain area and in a few hours time to find these areas clearings and new ones elsewhere, or in other words the physical findings are quite variable; they may be typical or altogether lacking. It is quite likely that our failure to obtain findings is due often to carelessness and slipshod examination. Our most dependent aids to diagnosis are age, previous history, the cough, cyanosis, which is always present varying in degree, fever remittent in character, rapid and shallow respiration, rapid pulse, a respiratory pulse rate of one to two or three. The X ray is recommended is a means to diagnosis especially if the patient is in a hospital. A blood count and urinalysis should be done.

An aspiring young painter once asked Sir Benj. West with what he mixed his paints; the great painter replied, "With brains sir." We might very aptly say we treat pneumonia with brains. Braumetz once exclaimed there is no treatment in pneumonia, there is but the treatment of the pneumonic. This expresses the writer's sentiments. It is the individual child which we must treat, undoubtedly the average child ill with pneumonia is overtreated. We might quote from Northrop.

Rules for killing a baby in pneumonia:—

"Crib in far corner of the room with canopy over it, stove red hot, room temperature 85, friends in room, also pug dog, chest tightly enveloped in heavy cotton jacket or poultice, onions or otherwise, windows nailed down. If child's temperature is 105, apply a poultice thick, hot and tight, blanket the windows shut the doors. If these won't do it, give coal tar products and wait".

Many of you have doubtless been called to attend babies in surroundings as above described. Remember that in broncho pneumonia there is mechanical obstruction plus toxemia. The little patient is in for a long hard fight we must make every effort to combat toxemia, overcome obstruction, conserve the strength and vitality and watch carefully.

General Measures.

The child should be warmly but loosely clothed, the use of jackets and heavy poultices in the opinion of the writer should be condemmed, they serve no useful purpose and they interfere with respiration. The room should be cool, fresh air, not cold air, as this seems to irritate the mueous membrane of the respiratory passages. Skillful nursing is of great importance, the little patient should be disturbed as little as possible except to be turned from one side to another; this can be done at the time of administering of food or medicine. The food is very important, the system requires from the first a supportive diet but not more than is needed for body metabolism, or that can be digested, try to restrict foods that tend to cause tympanitis. If the baby is on the breast, he will be well fortified. Soup, broth, egg albumen, cereals, orange juice and milk constitute the main diet. Water should be given in abundance. The mouth should be kept clean, especially is this true in older children. The time honored lemon juice and glycerine mixture is valuable in keeping lips and tongue moist and soft, it also tends to stimulate the appetite. The use of small mustard plasters applied every four to five hours for a short time only until the skin is slightly reddened is of much value. They tend to relieve pain and internal congestion and to increase peripheral circulation. They should be used early. Due caution should be observed to prevent burning of the skin.

Thorough elimination should be maintained by the use of fruit juices, milk of magnesia and castor oil.

Flatulency can be relieved by low rectal injections and by the use of carminatives.

Special Treatment.

For the most part drugs play a secondary

role in the treatment of broncho pneumonia. In case the temperature causes nervous symptoms hydrotherapy in the form of cold pack, tepid sponge and ice cap serve us best.

For cough small doses of codein are of value. The routine use of expectorants especially early is poor therapy. The restlessness and delirium is best controlled by hydrotherapy bromides.

Atropine sulphate is indicated in cyanosis and when there is much secretion in the bronchioles. Watch the heart when there is evidence of distress stimulants may be necessary. Here again the mustard is of value in the form of packs, also small doses of strophanthus and if more vigorous and quick action is needed hypodermic use of atropine strophanthus or camphor in oil. Porter recommends that when cardiac failure seems eminent due to dilation of the right heart vensection is a lifesaving measure. We should not hesitate to use hypodermic medication when indicated ammonium and iodides preparations used judicially are valuable in resolution.

In the stage of convalescence cod liver oil, syrup of iodide of iron and syrup of hydriotic acid are indicated, bitter tonics are often of benefit. Often change of climate is of marked value. The above mentioned measures are but simply an armamntarium from which we may draw as judgment directs.

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1. Holt Text Book Page 505.
2. Griffith Text Book Vol. 2 Page 50.
3. Porter & Carter Text Book Page 178.
4. Northrop Med. Record 1905 Vol LXVII, Page 253.

"X-RAY SECTIONAL MEETING."

The Central Section of the American X-ray Society will hold its mid-winter meeting in Louisville on Saturday, February 24th, 1923, for one day including an evening session. All members of your Association are invited and those interested in x-ray work are urged to attend as we feel they will be well repaid for one day's absence from their office.

Officers

E. C. Ernest, St. Louis, Mo.....President
John T. Murphy, Toledo, O.....First Vice-Pres.
B. R. Kirkland, Muncie, Ind. Second V. P.
D. Y. Keith, Louisville, Ky. Secretary

DIAGNOSIS AND TREATMENT OF ACUTE LOBAR PNEUMONIA.*

By Frank W. Fleischaker, Louisville.

Acute lobar pneumonia may best be defined as an acute infectious disease, characterized clinically by a toxemia, with fever, which most often terminates by crisis, and pathologically by a uniformly diffuse exudative inflammation of continuous portions of one or more lobes of the lung, the cause of which is most usually the diplococcus pneumonia in one or more of its various types.

In the typical case, the diagnosis is made with extreme ease. One but little versed in medicine could not fail but recognize the characteristic history and symptoms. The sudden onset, the chill, the fever, the pleuritic pain, the rapid and dyspnoeic respiration, the flushed face, the anxious countenance, the cough, harassing and dry in the early stage and finally, the expectoration of the typical pneumonic sputum, rusty colored and tenacious, the latter so marked that one spills the sputum with difficulty from the everted container.

What little need, one might ask, for physical examination of the chest. Nevertheless this should always be practiced.

The findings will verify your presumptive diagnosis. The crepitant rales in the early stage, and later, the increased tactile fremitus, the dullness over the consolidated area and the bronchial breathing and bronchophony establish your diagnosis beyond a doubt.

But sorry to relate, as in other diseases, we often deal with cases that are not typical, and these requires greater study, and the classification of such cases should be based on the combination of both clinical and bacteriological findings. Errors in diagnosis are particularly liable to occur in the intercurrent pneumonias, in those complicating chronic affections, and in the disease as met with in children, the aged and the drunkards.

The pneumonia in the alcoholic is insidious in onset and exhibits a comparatively low temperature range. Pain may be almost wholly lacking and cough slight; marked nervous symptoms and delirium are almost constant.

In children and infants a convulsion often marks the onset of the disease. Delirium and stupor appear earlier and more frequently than in adults, as well as vomiting and

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hyperpyrexia. Cerebral symptoms may be so prominent as to simulate meningitis. The disease is apical oftener than in adults and for this reason is frequently overlooked.

In the aged, the onset of pneumonia is usually insidious. Prostration is marked. Pain, cough and expectoration are slight or absent and the physical signs are ill defined. Death frequently occurs in the course of an apparently mild illness owing to cardiac weakness.

Pneumonia is rarely confounded with pulmonary tuberculosis. If so, bacteriologic findings will determine the diagnosis.

It should not be difficult to differentiate pleurisy with effusion, yet many errors are made. Especially is this true of an empyema complicating pneumonia. Many times in the course of twenty-one years of active practice, have I seen cases of complicating empyema diagnosed, "Delayed resolutions of pneumonias." By careful examination, both clinical and physical, this error should be easily rectified. The septic temperature of an empyema, the displacement of the liver or the heart, the absent tactile fremitus, the faint or entirely absent breath and voice sounds on auscultation, the blood pitcure, and finally the fluoroscopic examination or the aspirating needle, would dispel all doubts as to the nature of the trouble.

To summarize, I would like to repeat that no disease is more readily recognized than pneumonia in the large majority of cases, and the atypical cases together with differential diagnosis should cause no worry to the trained observer or thinker.

But this paper is limited and I have still to discuss treatment.

At the very beginning, I must state that lobar pneumonia is a self-limited disease, and under the most unfavorable circumstances, it may terminate abruptly and naturally. So, usually under the favoring circumstances of good nursing and proper diet it runs its course in a definite time anywhere from the third or fifth day to the tenth or twelfth. The circumstances which combine to determine whether a case of lobar pneumonia shall terminate in recovery or death, are numerous and diverse, and many of them seem to be entirely uninfluenced by any therapeutic measures that may be employed. There is no known specific treatment by drugs, in my opinion, which will cure pneumonia, despite the multitude which have been recommended at one time or another. Certain remedies, nevertheless, are available, which judiciously used by an alert physician may determine a favorable outcome by tiding the patient over critical periods.

It has well been said that the patient with pneumonia should be nursed, rather than be allowed to nurse himself. He should be spared all unnecessary exertion, thus conserving his strength and vitality. Emphasis should be placed on that statement as it is most important.

A large well ventilated room, abundance of fresh cool air, and a proper, easily assimilated diet are essential. The day of the overheated room with sealed windows, passes hard. It lingers here and there with the use of the pneumonia jacket, poultices, and the application of paste to the chest, a practice which should also be condemned. Fresh air makes respiration easier, stimulates the circulation, quiets the nervous system, and promotes appetite.

Abundant fluids, in the form of water, lemonade, or fruit juices, are beneficial. They aid in lessening the toxemia.

Drugs should in general be limited to those required by the symptoms as they occur. The administration of special remedial measures, among which may be mentioned quinine or some of its derivatives, guaiacol carbonate, and creosote, has been of no avail in my cases. At times, I have noted good results following the hypodermic administration of large doses of camphor dissolved in olive oil, but do not believe that the drug acts as a specific as is presumed by some.

Sufficient laxatives, preferably salines, which may be wisely preceded by calomel, should be given at the beginning of the illness. Later, a daily saline enema may be given to maintain free movement of the bowels. Toxemia is combated by helping to establish free elimination in this manner.

The maintaining of the circulation and support of the heart present the most serious problem in pneumonia. Weakness of heart muscle is evidenced by a fall in blood-pressure, and a weakening of the pulmonic second sound ascertained when ausculting the base of the heart. This sound, which is to some extent accentuated in the early stage of lobar pneumonia, becomes faint and barely audible when the right ventricle weakens under its strain. In this manner, it has aided me as a guide for the administration of cardiac stimulants. Other evidences of failing functonal power of the heart muscle are afforded by increase in cardiac dullness, by increase in rapidity and irregularity of the pulse, feeble and diffuse apex beat, and venous engorgement.

Digitalis is undoubtedly our best means for strengthening the weakening heart. The giving of digitalis until the heart is partially digitalized has been recommended as a routine measure in lobar pneumonia. This is assuredly beneficial in certain selected cases, but in others, it may be preferable to use the drug only when symptoms as enumerated

above point to its usage. Digitalis should be given in sufficient dosage to obtain the well known physiological results.

Among the other useful cardiac stimulants there may be mentioned camphor, strophanthin, and caffeine. Strychnine, as a circulatory stimulant, has not proved of much value in my experience. Alcohol, usually in the form of whisky or brandy was once very popular in pneumonia, but since Mr. Volstead has had his say, it has been relegated to the discard by many practitioners. It must be said, however, that it is useful where a diffusible stimulant is required, especially in the severe toxemia of the alcoholic.

Venesection is not often indulged in but there may arise some few cases with right heart dilatation and marked venous stasis where this procedure may prove beneficial.

The pleuritic pain in pneumonia is often relieved by the ice bag. It may be necessary however, in the early stage of the disease to administer codeine or heroin to relieve the pain or the troublesome cough. Expectorants are widely used but are little helpful.

For restlessness, bromides or small cautious doses of sulphonal, veronal or chloral may be advisable. An ice cap applied to the head often has a sedative action. Hydrotherapeutic measures are invaluable in pneumonia. The ice cap and cool sponges being the most generally useful.

Remedies, other than I have mentioned, may be beneficial in special cases, but it is a good rule to remember that in general, the number and quantity of drugs should be as small as possible.

In closing, I will discuss but briefly the use of vaccines and antipneumococcic sera.

Prophylatic vaccination or immunization against pneumonia has not attained, as yet, great importance, but the progress of the past few years warrants the hope that much more may be accomplished in the future. The difficulty of successful immunization is due to the multiplicity of types of the pneumococci.

Vaccines prepared from the cultures of the pneumococcus and autolyzed pneumococci have been administered in the treatment of acute lobar pneumonia but clinical results do not appear to justify this usage.

The use of antipneumococcic serum in the treatment of pneumonia presupposes that adequate laboratory equipment and personnel are at hand for the rapid identification of the various types of pneumococci. That reason, together with expense, and doubtful clinical results, operate against its popularity.

Summarizing the work done at the Rockefeller Institute, it was found that favorable therapeutic results were obtained in Type 1 infections, using the corresponding antiserum, while antipneumococci serum to Types 2 and 3 showed very slight or no convincing evidence of their therapeutic efficacy. A polyvalent serum for treatment of pneumococcal pneumonia of all types has been prepared by some commercial manufacturers, but it has not proven successful. It is well to remember that claims of favorable clinical results following the use of vaccines, sera, or so called "specific drugs," based on reports of small numbers of cases, are very likely to be misleading in a disease of so variable a course as pneumonia.

SOME OF THE COMPLICATIONS OF PNEUMONIA.*

By William Vickers Neel, Henderson.

Whatever may be the route in which the lungs are invaded in pneumococcus infection, whether by extension through the bronchial tree or by distribution from the blood stream, a blood stream invasion with a widespread distribution of the pneumococci throughout the body is the rule very early in the disease. This being the case, it only remains for certain local conditions, to be favorable, and then develop a pleuritis, pericarditis, endocarditis, meningitis, empyema, edema of the lungs, edema of the brain, peritonitis, arthritis, mediastinitis, bursitis, otitis, mastoiditis, myostitis, thrombo-phlebitis, sinusitis, icterus, parotitis, nephritis or other complications.

I will not speak in detail of every complication of pneumonia, but will discuss the complications which seem to me the most important and the most frequent.

Pleurisy: One of the most prominent complications of pneumonia is pleurisy. The advent of the pleuritic inflammation varies in different cases, usually appearing with the extension of the inflammation to the surface of the lungs, or, it may constitute the most prominent early feature of the case. When pleurisy occurs thus early and constitutes the salient clinical feature, we speak of it as pleuro-pneumonia.

The exudate under these circumstances is often copious and seems particularly rich in fibrin. In the milder pleurisies occurring by direct extension from the inflamed lobe, the exudation is often fibrinous only. A purulent accumulation is not unusual, indeed recent observation and investigation have demonstrated a frequency which was unsuspected.

Many cases of pleural effusions remain undetected until the period of defervescence

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the incompleteness of which event may call for a more careful physical investigation of the chest and the discovery of the accumulated fluid. This condition is marked by continued weakness, usually by some degree of dyspnoea, and if the fluid is purulent, by continued irregular elevation of temperature, although with simple effusion a considerable rise may persist. The pneumonic origin of pleurisies, apparently of the acute general variety, has been demonstrated by means of the microscope, the pneumococcus being present in large numbers, and where the effusion was purulent, the presence of the streptococci and the staphylococci.

Empyema: A frequent complication of peumonia is empyema. The diagnosis of an empyema should be based on: (1) the observation of the patient and his chest: (2) physical signs: (3) exploratory puncture and (4) the xray. The chart of the patient is always more or less typical for empyema. After the pneumonic process has disappeared by crisis or by lysis, we have an interrupted period of from three to six days free of fever. Then the intermitting pus temperature of the empyema begins. This should call our attention to the probability of a pleuritic infection. The physical signs—dullness on percussion, abolished respiratory sounds, and lessened vocal fremitus—will be always present if the empyema takes place in the whole side of the chest wall, but in encysted empyema enough lung tissue lies over the pus cavity to give respiratory sounds and air sounds on percussion.

There are three types of empyema: (1) the empyema following hemolytic streptococcic infection. This occurs early as an exudate in the first week of the pneumonic process, is thin, very copious, and capable of being absorbed, and should be handled if necessary to relieve pressure: (2) the empyema following lobar pneumonia. This usually sets up about four weeks from the beginning of the pneumonic infection, is of a good prognosis, and can safely be handled with costectomy. (3) the empyema following influenzal pneumonia. This also develops about four weeks from onset of the process. On account of serious and frequent metastatic suppuration, its prognosis is more severe. It is best handled by thorough drainage.

I have but recently had a case of empyema to rupture spontaneously into the bronchi. The patient a white male, age 46, previously robust was suddenly stricken with a severe pain in lower left lung, initial chill, dyspnoea and a very high fever. He had been ill about ten days when I was called to attend him with what he describes "as a cold on his chest". I made a clinical diagnosis of pleurisy with effusion. The effusion was purulent almost from the beginning, for within twenty-four hours after my first attendance, the abscess ruptured spontaneously into the bronchial tubes on left side, and the patient through shock and the sudden inundation of the lungs presented a picture bordering on collapse. He remained critically ill for a period of four weeks and coughed up several quarts of pus during that time, the pus was rich in cells, very viscid, and somewhat greenish in color and separated upon standing into an upper or serious layers, which was opaque, and a purulent layer below. He ran an irregular temperature for three weeks, had frequent sweats, and became rapidly emaci ated, but remained fairly strong and at this writing bids to make an uninterrupted recovery.

Pericarditis: Acute pericarditis constitutes a rather frequent and serious complication of pneumonia. Records of 300 necropsies on pneumonia patients from the Medical Service of the U. S. Army base hospital at Fort Riley, Kansas, are available for the purpose of study. Among this number, pericarditis was found to have occured in 24 per cent. Of these 14 were of the acute serofibrinous variety, 44 of the acute purulent, and 14 were of the sub-acute fibrinoplastic and purulent variety.

In approximately 5 per cent of the pneumonia patient on whom necropsy was performed, acute serofibrinous pericarditis had occurred. Among the 14 instances, lobar pneumonia had occured in eleven and bilateral bronchopneumonia had occurred in three.

In approximately 5 per cent of the pneumonia patients on whom necropsy was performed, the sub-acute form of pericarditis, characterized by fibrino-plastic and purulent exudate had occurred leading to the "shaggy" heart. Among the fourteen instances, lobar pneumonia had occurred in eight, and bronchopneumonia in six. It will be noticed that in the 72 instances of pericarditis, both lungs were involved in the preceding or accompanying pneumonia in 45.8 per cent, and the right side lung in 25 per cent.

One of the most important factors in the development of pericarditis as a complication of pneumonia appears to be its association with empyema. Pericarditis and the associated myocardial changes are frequently important contributory causes of death in empyema.

In the diagnosis of pericarditis the clinical sign of greatest importance is the to and fro friction sound, not transmitted beyond a limited area, which is usually first heard over the base of the heart, or in the fourth of

fifth interspace close to the sternum, and which is practically synchronous with the heart beat. It possesses a distinct rubbing quality, not unlike but less perceptible than a pleural friction sound. Its duration is transatory if the effusion occurs rapidly, and heart tones become distant or muffled, or obliteration of the cardiac impulse occurs. The differentiation of the pericardial friction rub, in a patient with dyspnoea due to pneumonia, empyema or a partially collapsed lung, is a matter of great difficulty. In some cases, the friction rub can best be heard below the angle of the left scapula, because of the transmission through a portion of the consolidated lung. With effusion into the pericardium, the area of heart dullness is increased, and when the effusion becomes marked, we have increased difficulty in breathing, small, rapid and sometimes an irregular pulse, a gradual suppression of heart-sounds with marked distention of the veins of the neck.

Notwithstanding the gravity which the presence of pericarditis leads to in pneumonia, recovery frequently takes place even in the most serious cases.

Endocarditis: The occurence of endocarditis with pneumonia is much more common than was formerly supposed. The presence of the pneumococcus in the products of endocardial inflammation strongly suggest the probability that these organisms infect the endocaridum as well as the lungs.

The malignant form of the disease is rather more frequent than the benign. The presence of an old endocarditis is obiously a predisposing element. The intensity of the pneumatic inflammation is not necessarily a criterion of the complication of the endocarditis.

The presence of pneumonic endocarditis is often not recognized, partly because of the latency and obscurity of its symptoms and partly because of the preponderance of those of pneumonia. In some cases the symptoms are pronounced. There is precordial distress, sometimes slight dull pain and the presence of murmurs of recent formation, and rigors and sweats. The fever may not be excessively high notwithstanding the evidence of sepsis. Sometimes embolic processes appear in the course of the disease, especially in the instance of malignant endocarditis after the crisis.

Endocarditis is perhaps the most frequent complication of pneumonia as shown by the statistics of Olser. Not only is endocarditis the most frequent cardiac complications of pneumonia, but it occurs more frequently with this than any other affection. It is very apt to be developed upon a pre-existing valvular disease.

Meningitis: Evidence of meningeal irritation is often observed during the course of a pneumonic infection, and these phenomena are often treated as unimportant—as mere incidents of the general toxemia. But there are no signs or symptoms by which these warnings can be set aside as due merely to a so-called meningismus, by which is meant that there is no actual pathologic condition of the meninges; nor can a positive diagnosis of meningitis be made from the clinical signs and symptoms alone. A lumbar puncture should be made, with microscopic and cultural examination of the fluid obtained, in all cases which present a suspicion of meningeal irritation, and the eye grounds should be examined daily for evidence of chocked disc.

Pneumococcus meningitis may develop during any stage of the disease. It may develop after the usual onset suggestive of a pneumonia without the development at any time of any definite signs of pulmonary consolidation, or the meningitis may develop during convalesence, in which case it runs a subacute course of several weeks duration before the usual fatal termination. It may develop by extension from a pneumococcic infection of the frontal, sphenoid, or mastoid sinuses, or directly from the middle ear.

Cases of recovery from pneumococcus meningitis have very rarely occurred. This is bourne out by the following citations:

Osler: All of our patients die. The meningitis of pneumonia is almost always fatal.

Rankin: Where the.. pneumococcus or streptococcus was found none of these cases recovered.

Butler: Meningitis in the course of a pneumonic septicemia is rapidly fatal.

Bartlett: Pneumoccoccic meningitis is particularly always fatal.

Babcock: Meningitis is a very serious complication of pneumonia and is nearly always fatal in from two to four days.

Practically all cases that I could find in literature resulted fatally. It is obvious then from the foregoing that meningitis is perhaps the most serious and fatal complication of pneumonia.

Icterus: Jaundice may develop in the course of pneumonia, and apparently bears no relation to the severity of the case. Some observers distinguish between an icteroid pneumonia and one with true jaundice. There does not seem to be, however, a well established connection between the two affections, except that in persons subject to hepatic derangements and excesses in drinking bilious

symptons are liable to appear. The jaundice may also depend upon obstructive catarrh.

Oedema of the lungs: Oedema of the lungs in its general severe type is fortunately one of the rarer complications; while it may occur in the robust it is more often met in feeble individuals who have been undermined by some chronic affection such as diabetes or Bright's disease. It is indicated by the development of small-sized bubbling rales, a copious, frothy, watery expectoration, and the rapid supervention of cyanosis, oppression of breathing, anxiety, and finally coma. The patient utterly drowning in his own secretions.

Emphysema: A generalized interstitial emphysema is occasionally a very serious complication of pneumonia, and is characterized by urgent dyspnoea suddenly appearing after violent coughing or other possible causes. If pneumothorax occurs the dyspnoea is excessive.

Peritonitis: Peritonitis is a rare complication of pneumonia. It is not easy to explain its origin, but it seems probable that it is due to extension through the diaphragm.

Nephritis: It is well for us to make frequent repeated examination of our patient's urine in all acute infectious diseases, and pneumonia is no exception to the rule. While nephritis is not a frequent complication of pneumonia, yet it sometimes occurs.

Other Complications: Other complications of pneumonia as I have previously mentioned are: arthritis, mediastinitis, bursitis, otitis, mastoiditis, thrombo-phlebitis, sinusitis and parotitis.

DISCUSSION:

W. W. Anderson, Newport: The first essayist (Dr. Pritchitt) placed more stress than was necessary on the overaction of the ala nasi as a diagnostic symptom. That in my judgment merely means dyspnea, and you can see it in mental excitement without any disease whatever. Of course, it is present in the dyspnea of pneumonia but is not at all pathognomonic.

One of the things on which he laid a little stress is the increasing whispered voice transmission. I think it is of the highest importance in the diagnosis of bronchopneumonia. Areas of consolidation are often small, sometimes deeply seated, and do not yield the characteristic physical symptoms of larger areas, or those that are superficially situated, but the increased whispered voice can be very well elicited when most other signs are missing. If in connection with the local increased whispered voice over the suspected area you can elicit increased fremitus, dullness and bronchial breathing, you have your diagnosis pretty well established in connection with the characteristic rale.

Dr. Pritchett spoke of bronchopneumonia as terminating by lysis after two or three weeks. In some cases occasionally it is even longer than three weeks. Lysis begins in the great majority of cases in children at a much earlier date, and no doubt as early as the third or fourth day, depending on the particular kind of guilty germs, and the particular facility with which the patient manufactures his own antitoxin.

He mentioned dullness in bronchopneumonia usually as bilateral. There is no reason why it should be. True enough, pneumonic areas are scattered over both lungs and bases posteriorly.

I had intended to say something on the matter of serum and vaccine treatment, but that phase of the subject has been so much better discussed by Dr. Simpson that I will pass that up by simply mentioning that I agree with him in substance that as far as vaccines and even serums are concerned, for the most part it is a case like the Scotch verdict, not proven. The old poultice has been rather unreservedly condemned. Let me say, if applied posteriorly, with the child lying on the back or side, there is no serious reason for objecting to its application, and in painful conditions, such as groanings, painful respiration, it will be found to give great relief. It should not, of course, be allowed to weight the chest in front. A much larger area of the lung surface is accessible from the back than from the front, and it will produce relaxation of the tissues, and put the child into a more comfortable state frequently by which elimination is increased. I think in some instances, especially of the painful kind, with a dry hot skin, it is beneficial.

The use of expectorants has been rather deservedly condemned, and especially does this apply to the ammonia preparations when there is already an abundance of secretion. Sometimes, the ammonia preparations are useful in thinning the secretions, so that expectoration occurs more easily, but it must be remembered that the main thing is to sustain the child.

E. A. Stevens, Mayfield: The subject has been so fully discussed that I feel there is very little left for me to say. The discussion has been the most conservative discussion on the treatment of pneumonia that I have ever heard. I have been hearing pneumonia discussed for well nigh forty years, and I must say frankly that this is the most conservative discussion of the subject that I have ever heard. There are three remedies still in common use. The first is opium One of the essayists mentioned the fact that in mild cases we sometimes have sudden death. I have seen that occur, but it is my judgment that sudden deaths in pneumonia are more often due to the result of opiates than any other one thing. I believe where a patient is already burdened in his respirations, to give him opium, if it can be avoided, is to pile coals upon the

fire that is burning so destructively.

The other remedy is alcohol. It is hardly mentioned, but there are practitioners who are still using alcohol in the treatment of pneumonia.

When I began the practice of medicine many years ago we had three things which we gave in pneumonia. The first was Dover's powders; the second veratrum, and the third was alcohol. It has been my rule to watch my supply of medicine from one time to another to see whether it was being used or not. The amount of alcohol was enough for use between my visits, but I never knew exactly who got it.

A third one is the coal tar preparations. They have hardly been mentioned, probably not at all. There are practitioners who are still using coal tar preparations. In '85 I began with antipyrin and then passed through the period of the use of antifebrin, phenacetin, aspirin, etc., and I find the result is similar with all of them. During the epidemic of influenza that swept over this country it was used to relieve pain, and the coal tar preparations were the things that were used from one end of this country to the other. These preparations contributed more toward the production of that complication known in pneumonia as the filling up of the lungs than any other one thing, and if I had anything to say of those diseases which tend toward pneumonia, I would cut out the coal tar preparations. Of all the stimulants I have used, I have obtained the best results from caffein.

Philip F. Barbour, Louisville: I am more deeply interested in the first paper by Dr. Pritchett because bronchopneumonia is more essentially a disease of childhood than is lobar pneumonia, and because also bronchopneumonia is a much more fatal disease in children than is lobar pneumonia.

The mortality of frank pneumonia in childhood ranges from 2 to 5 per cent. The mortality from bronchopneumonia runs up to 30, 40 or even 50 per cent. It is a much more difficult disease to treat. I think if we will bear in mind that bronchopneumonia is practically always an extension from a bronchitis, and that it is due to a combination of various bacteria which may be concerned in bronchitis, we will understand why it is difficult to get a specific vaccine or specific serum that will do much good for bronchopneumonia in children. I think the first thing in the treatment of pneumonia is to prevent bronchopneumonia by treating bronchitis early and stopping it as soon as possible. With bronchopneumonia we should get busy and limit, if possible, the amount of inflammatory trouble that is going to take place in the lung. Here I think we can do a great deal in the first days. After an exudate has formed, it takes nature to clean the exudate out, and absorb it. Before the exudate has formed, we can limit the amount of exudate and stop the inflammation in the bronchioles and air cells by getting after the child.

One drug of great value in stopping extension of the inflammation is aconite. I do not hesitate to give it and push it the first day or two. After the exudate has formed, it is of no further value. I think also hot applications in the first day are of great value. I do believe hot applications over the chest the first few hours tend to dissipate the congestion and lessen the amount of inflammatory exudate. They do not interfere with the child's respiration and add to its comfort.

I will say this for the benefit of those who have not had pneumonia, that aconite should be used to stop the exudate. The second class of drugs that are valuable in pneumonia are the alkalies. They have not been stressed this afternoon but, it seems to me, in all my bronchopneumonias or lobar pneumonias these patients do better if thoroughly alkalinized. In children I use two drams of citrate of soda per diem. It is possible to get over alkalinization. When I push the soda in these cases respiration becomes slower and they are very much more comfortable. Rapid respiration is undoubtedly an acidosis, and I do know there is a great deal of acidosis in pneumonia. If you examine the urine, the acid content of the urine is much above normal and may be observed in a great number of cases. When you alkalinize these patients thoroughly and reduce the percentage of acids, they will breathe more easily and more comfortably, and the disease will go on to a crisis early.

One of the last points I want to stress is that bronchopneumonia is not a disease that tends to stop as pneumonia does. It has a combination of bacteria which tends to prolong the disease. It is a long fight to maintain the strength of the child and to reduce the amount of exudate and to hold the child until nature comes to its relief.

We must remember also in bronchopneumonia there is damage done to the air cells of the bronchi and the tissues surrounding the bronchi. We know from postmortem examination that there is a round cell infiltration around the bronchi, and that condition is one that does not clear up quickly.An exudate of fibrin in the air cells does not take long to absorb after the pneumonia is well. If you get a round cell infiltration around the bronchi and in the walls of the air cells you have something that remains. It takes a long time for the lungs to clear up after a real attack of bronchopneumonia.

Emmet F. Horine: The organ upon which systemic life depends more immediately than upon any other is the heart. Therefore, I was glad to hear the essayists express the opinion that the heart must be watched.

In all forms of acute illness the heart must be taken into consideration. In our watchful care of this organ, primarily, we look for cyanosis; second, for engorgement of the veins of the neck; third, for a lowering of the blood-pressure and increase in pulse rate.

How are we going to combat these various factors? Primarily, to combat cyanosis we need oxygen, and I think of the various remedies at our disposal oxygen is certainly of great benefit. Oxygen should be begun early, not when the patient is in extremis, but in the early stages when you begin to notice even slight cyanosis.

The second drug I might mention in an endeavor to forestall any circulatory failure is digitalis. I will admit that there are many practitioners who decry the use of digitalis in acute conditions. Personally, I have seen it work wonderfully, and I would not want to conduct a case of pneumonia unless I were able to use this drug. For children, of course, the dose should be small; for an adult, large. We know that digitalis acts very slowly, so it is better to begin with small doses in order to render the patient sensitive before you actually need the drug. In other words, with the average adult I begin with a dose of four or five minims; then increase the dose to twenty or thirty minims if need should arise. There is one contra-indication to the use of digitalis in pneumonia which I desire to mention, namely, any tendency to heart-block. The reason why digitalis should not be used if heart-block should manifest itself in pneumonia is that this drug will render such a condition much worse by increasing the block.

A third drug I desire to mention is pituitrin. The rule of Gibson which, as you know, is that when the blood-pressure expressed in millimeters of mercury does not fall below the pulse rate expressed in beats per minute, we have a favorable sign; whereas when the systolic blood-pressure expressed in millimeters of mercury falls below the rate expressed in beats per minute, we have an unfavorable sign. It is this fall in blood-presure below the level of the pulse rate that calls for the administration of pituitrin. For an adult one may begin with one c.c, repeating it at four to six hour intervals. If necessary, this can be increased to two c. c. or what is perhaps better, give one c. c. and decrease the interval to two or three hours. I think the rule of Gibson has certainly stood the test of clinical experience and it is something on which we can base a prognosis.

A fourth proposition in pneumonia, which was mentioned by one of the essayists, is venesection, which is of value in certain selected cases. Given a plethoric man, with a markedly accentuated second pulmonic sound, and with increased blood-pressure, venesection would offer considerable relief, certainly there would be no reason why eight, ten, twelve or fourteen ounces of blood could not be removed with benefit.

Vernon Blythe, Paducah: I do not think there is any more important scientific subject to come before the Association during this session than pneumonia, particularly when we realize that pneumonia is causing more deaths than any other disease that afflicts humanity today, and we are succeeding less in checking its ravages.

There are a few points in the papers and the discussions I would like to call attention to. I heard very little either in the papers or in the discussions concerning the character of the intestinal tract. I sometimes think, if we take care of the intestinal tract in cases of pneumonia, to a great extent the lungs will take care of themselves. It is a fact that when you see a case of pneumonia early you often find tympanites, distention of the stomach, a great deal of gas in the transverse colon, and nothing is more beneficial and comfortable to the health of the patient than a careful regime of diet, together with a mild medium dose of calomel and castor oil.

I disagree with some of the remarks made here to some extent. I do not think there is anything that is more beneficial in pneumonia than quiet and rest and absolute comfort to the patient, and many times I have never been able to find how you can do that unless you give the patient a little Dover's powder, especially a child, or a mild dose of codein, if the patient is an adult. This is especially true if there is a serious nervous type of pneumonia, because where there is a possibility of meningeal disturbance, I do not know of any drug you can use that will give more benefit, when reasonably, carefully and judiciously used, than small frequent doses of sedatives of that kind.

I take it, all of us have seen this great array of cases of pneumonia and influenza that occurred during the great epidemic and then during the war, at which time a great number of the boys were sick. Most of them I personally saw were of the bronchopneumonia type that went on to rapid development. Often it was difficult to tell where the location was, if it was more than simple bronchitis. The pneumonic process was centralized in small areas. It required good judgment and close physical diagnosis to interpret and find out the true conditions existing. These conditions spread rapidly. I remember some of these cases that were autopsied, and at the autopsy conglomerate masses were oftentimes found throughout both lungs.

I rose particularly to call attention to the care of the stomach and intestinal tract.

Virgil E. Simpson, Lousville: I think one is impressed at the outset with the conservatism of the essayists. Nothing radical is advocated in the way of therapeutic management of either type.

The paper by Dr. Pritchett on bronchopneumonia contains several phases which could well be reduced to aphorisms, it seems to me. One that struck me particularly was in regard to the diagnosis, namely, that when we are in doubt, examine the urine. It is a fact that pyelitis is frequently overlooked in children as it is overlooked in adults, and not infrequently do we have a clinical course which is more or less confusing until careful study of the urinary excretion clears up the diagnosis of the pyelitis which was not suspected.

I think perhaps the use of poultices and other protective dressings, of whatever character or nature, as well as the old pneumonia jackets, have been largely abandoned by the profession. They certainly do no good, and they may possibly do some harm; at least, they interfere very materially with the comfort of the patient in my judgment, and they interfere with the ease and facility of making such examinations of the chest as are necessary from time to time. They also interfere very materially with the efforts of the nurse to keep the patient clean, which promotes his comfort and welfare, and in no small measure contributes to his ultimate recovery.

The question of specific therapy of lobar pneumonia is an interesting one. I am quite ready to concede that in order for one to carry out specific therapy in this condition, it requires a well equipped laboratory or access to one. It does not mean that the physician should be possessed of one, but he should have access to one in order that typing of the infection may be made. If we could get fixed clearly in our minds this one fact with regard to specific therapy, not only in pneumonia, but in all other diseases, that germs are specific in their nature, and that antibody formation is likewise specific, and that the use of vaccines or serum promiscuously, without regard to the type of infection, whether pneumonia or other kind of organisms, will not result in any good, it would mean a great deal. With this idea in our minds and a laboratory where this sort of work is available, I would stress the importance in every case of lobar pneumonia of having the sputum examined and of making every effort at typing the kind of organism, etc. Work along this line has resulted, as the essayist has pointed out, in a classification of the causes of pneumonia into four groups: Types I, II and III of pneumococcic strains and types IV representing a promiscuous group of organisms.

The work that has been done in the use of vaccines and sera in the prevention and treatment of pneumonia has been clearly stated by the essayist. Pneumococcic vaccines as a treatment procedure are useless; in fact, making a broader statement than the essayist has made, I would insist that the use of vaccines in any acute systemic infection is usually, a useless procedure. There is some reason for their use as a preventive measure, but with rather distinct limitations. Vaccines made from types I and II have been fairly uniformly satisfactory; that of type III is of doubtful value while that made from type IV is of little or no value.

An altogether different proposition is presented when we come to consider the value of Sera from a therapeutic standpoint. Sera differs materially from vaccines in their modes of action. When a vaccine is given a patient, his vital reactive powers are depended upon to manufacture antibodies, protective in their nature; whereas in the use of a serum the lower animal kingdom has been drafted in the manufacture of antibodies, the serum from which, filled with ready-to-use protective agencies, is introduced into the patient. No demand is here made upon his vital processes to elaborate any material whatsoever; he is entirely a passive agency. The germs causing the disease are foreign to his system and toxins are the product of their activity; the antibodies in the injected serum combine with the germs or their toxins and the process of destruction, peculiar to the kind of invading germ obtains be it bacteriolytic, antitoxic or what not.

The work done experimentally and clinically with regard to the use of sera has come to be pretty fairly settled in the statement that the essayist expressed, that in type I infection, the use of pneumococcic serum is of considerable value. It is of less value in type II, of less value in type III, and of no value in type IV, which means a promiscuous aggregation of organism.

How should a pneumococcic serum be given, in what dosage, at what intervals and what may be expected from its administration are pertinent questions and may be answered in rather definite, even dogmatic terms. After typing of the sputum has been done, which requires only a few hours, a decision is made as to the administration of a serum. If type III or IV are shown to be the caustive organisms a serum is of doubtful value and should not be given. If types I or II are found to be the cause a serum containing the antibodies of the offending type should be given at once. The initial dose varies from 75 to 100 c. c. according to the age of the patient and the severity of the disease. In administering all sera it is advisable to determine if the patient possesses any degree, of protein sensitization. This is done by giving 0.5 to 1 c. c. and wait an hour for the appearance of undesirable symptoms. If none appear the remainder of the initial dose is given; should evidence of anaphylaxis appear, desensitization may be done as suggested by Besredki.

The serum may be given subcutaneously as diphtheria antitoxic serum is given but the intravenous route is preferable. The introduction of a needle into a vein is not difficult and the

dangers of a faulty technique are not sufficient to justify leaning to the side of conservatism. The serum should be given slowly, 15 or 20 minutes being desirable. It may be given undiluted or an equal quantity of normal saline added. The condition of the patient at the end of 12 to 14 hours determines the question of a second dose. If little or no improvement is noted a second dose is given in approximately the amount of the first dose and in the same manner, no fear need be entertained of subsequent doses since sensitization does not obtain for several days.

The desirable clinical picture following the primary or succeeding doses may consist of either a premature crisis with its rapid fall in temperature, relief from the dyspnea, free diaphoresis etc., or a subsidence by lysis. In other words the condition parallels that of a pneumonia terminating favorably but spontaneously. The blood usually becomes sterile in 8 to 10 hours after administration.

The convalescence of the serum-treated patient differs in no essential from that of the spontaneous recoveries except, perhaps, in its shorter time. This is but logical since the patient is saved some 5 or more days of serious illness hence his vitality should be at a higher level when recovery begins. Delayed resolution occurs as frequently as it does in cases treated by the older methods. So also will pleuritic effusions, simple or purulent, occur as it does in cases as ordinarily treated.

A very practical point arises when no sputum can be obtained for typing. In such cases the blood may be cultured or puncture of the lung with a long aspirating needle may result in securing a specimen. This latter procedure has frequently been done and no harm appears to have followed.

J. H. Pritchett, Louisville (closing on his part): The discussion has brought out the point that it is not so much the gun but the man behind the gun in order to get results. We have used various remedies as given by various men, and I suppose we have all got fairly good results.

In regard to the question of lysis I wish to say that I have never seen a case of bronchopneumonia have a lysis until the tenth or fourteenth day. In the average case it is at least ten days or longer. That is one of the points that most textbooks point out. It may take two or three weeks.

In regard to the use of alcohol, some of the authorities, notably Porter of San Francisco, and Holt, of New York, are using whisky in small doses for pneumonia in children, and they claim good results from it.

Frank Fleischaker, Louisville (closing): I have nothing further to say except to thank the members for the free discussion they have given on this subject.

INTERMITTENT POST OPERATIVE BILIARY OBSTRUCTION: CASE REPORT.*

By Leon K. Baldauf, Louisville.

I have under observation an interesting surgical case presenting some unusual post-operative features.

A woman of forty was operated upon a year ago, the gall bladder and several hundred calculi being removed. One large common duct calculus was extracted with considerable difficulty. The patient informed me that the operator tried to crush the calculus in the duct. For several weeks after operation she was decidedly jaundiced and had considerable fever.

From the patient's description it seems probable a calculus was left in the common duct near the ampulla of Vater which by its ball-valve action produces intermittent obstruction; when sufficient secretion accumulates to float the calculus away from the ampulla of Vater, obstruction is relieved and bile again passes into the duodenum. Every two or three months since the operation she has had attacks of this character, her temperature rises to 103F to 104F., she has chills, sweats, jaundice, leucocytosis (15,000), persisting for about ten days.

I would like to ask some of the surgeons present to express an opinion about the case with especial reference to further surgical treatment. If the calculus is lodged in the duct near the ampulla of Vater, would it be good surgery, or is it the custom, to effect its removal by the trans-dudoenal route? The patient has lost about forty pounds in weight, her health is markedly impaired, and I have advised her to undergo secondary operation.

DISCUSSION.

Guy P. Grigsby: Dr. Baldauf is probably correct in his assumption that lodgment of a calculus near the ampulla of Vater is causing the intermittent biliary obstruction. This concretion was probably overlooked at the original operation. During an attack such as he has described obstruction is complete and relief follows the accumulation of bile as stated.

As a result of the previous operation adhesions have likely formed the separation of which might be difficult, and it seems to me for that reason the trans-duodenal route should be selected for the secondary operation. If the calculus is lodged near the ampulla of Vater it can be easily removed after dilating the opening.

I believe Dr. Baldauf has given the patient the proper advice, i. e., secondary operation for removal of the calculus.

*Clinical report before the Louisville Medico-Chirugical Society, October 27th, 1922.

Louis Frank: I am reminded by Dr. Baldauf's remarks of an operative case seen eight months ago. At operation the common duct was noted to be markedly dilated but no calculus could be palpated therein; the woman had never been jaundiced; and although we surmised some obstruction might have previously existed, no calculus being detected, the common duct was not opened.

Before being dismissed from the hospital the patient again complained of pain but had no jaundice. The pain was of such character, however, that we concluded our first surmise (at one time obstruction) was correct. A second operation was performed and a calculus removed from the duct by the trans-duodenal route. The woman had no jaundice at any time. The calculus had acted as a ball-valve causing partial obstruction; after dilatation of the duct the calculus floated away and bile again escaped into the duodenum. The patient has had no further trouble since the calculus was removed.

The crushing of calculi in the common duct is not good practice because of the impossibility of removing all the debris afterward. All such patients have cholemia and cholangitis. As Dr. Baldauf knows his patient is not suffering from gallstone-obstruction; the chills, fever and jaundice are the result of cholemia and cholangitis. Every patient with calculi in the common duct or elsewhere in the hepatic system outside the cystic duct and gall bladder has an associated cholangitis.

To leave even a part of a calculus in the common duct, as must have happend in Dr. Baldauf's case, is a dangerous procedure, as the presence of this concretion is certain to cause future trouble. I realize it is somtimes difficult to remove calculi from the common duct; they have sometimes remainded there for such a period that softening or disintegration has ensued and small particles may in consequence be left. It is advisable to investigate the duct carefully by passing a probe to the duodenum, removing all remaining particles of stone with a scoop; and in such cases drainage should be practiced for a considerable time.

It is probably good practice, though we do not do it in every case, in operating for gall stone to open and explore the common duct. We have seen a few cases in which no calculi could be palpated after exposure of the duct, yet the patients continued to have symptoms and calculi were found by us at subsequent operations.

I recall a patient seen two years ago who had a persistent fistula after all bladder and calculi had been removed. A second operation was performed and a calculus found in the common duct. The duct was not opened at the original operation because no calculus could be palpated and the patient had never had jaundice.

In the last eighteen months we have operated upon another patient who had no jaundice and yet had a calculus in the common duct. No calculus was felt at the original operation and the common duct was not opened. For this reason to open and explore the common duct in every case when operating for gall stone is probably a wise procedure. We recognize, however, that in some instances it might be dangerous to prolong the operation by exploring the duct; but wherever possible it should be done.

In the case Dr. Baldauf has reported secondary operation should be performed, but I question whether the calculus will be found lodged at the ampulla of Vater. The history is typical of ball-valve action of a calculus floating in the common duct; when the duct becomes sufficiently filled with secretion the calculus floats away and bile again passes into the duodenum.

There has been much discussion during recent years concerning the advisibility of cholecystectomy and what happens afterwards. We know that the common duct becomes greatly dilated after removal of the gall bladder. It has been shown that the function of the gall bladder is not merely to act as a safety valve or governor, but rather as a reservoir for the purpose of concentration of bile, This explains the occurance of diarrhea and the frequent defecations practically all patients have for a time following cholecyctectomy. The common duct finally dilates to the point where it acts as a reservoir, proper concentration of bile again occurs, and diarrhea subsides.

CYSTITIS.*

By W. Z. Jackson, Arlington

Cystitis is an inflammation of the mucous membrane of the bladder. It may be either acute or chronic, the latter being clinically the much more frequent condition.

Pathology: The vesical mucosa is intensely hyperemic, puffy, edematous and a bright red color, this may be more intense at points, especially in the vicinity of the trigone. The membrane is bathed in a thick tenacious mucopus, and here and there may be noted denuded areas. The exfoliated epithelium often hanging in shreds from the bladder wall. Hemorrhagic effusions may be observed. In the severer grades of the disease the intense general hyperemia causes a disappearance of the blood vessels that are to be seen in the normal conditions, occasionally small patches of ulcerations, due to abcess formation, and in rare and fatal instances the entire bladder wall is involved in a necrotic process.

Etiology: The vesical epithelium s very responsive to systemic circulatory disturb-

*Read before Carlisle County Medical Society at Bardswell, December 5, 1922.

ances. Thus, sudden exposure to extremes of cold or heat or violent atmospheric changes, retention of the urine, enlarged prostate or other tumors, cystocele, urethral stricture, or paresis of the bladder wall. The passage of an unclean catheter or sound. Gonorrheal cystitis is also to be included under this heading. Febrile cystitis, which constitutes the second class of septic cases. Thus, all of the infectious diseases and fevers, typhoid and the other exanthemata, rheumatism, diphtheria, tuberculosis, and lagrippe are included in the etiology. Certain drugs when taken into the system manifest an irritant action on the vesical mucosa, and excites a severe grade of acute cystitis. Among these may be mentioned cantharides and other irritants of the urinary tract, cubebs, copaiba and sinapis. Workers in coal-tar, dye-stuffs are sometimes affected with acute cystitis.

Traumatic inflammation of the bladder follows the improper and careless use of the catheter, or other instruments.

From adjacent inflammation: Irritation with consequent inflammation may result from the extension of an inflammatory process from surrounding structure either by continuity or contiguity of tissue.

Symptoms: Pain, vesical irritability, vesical and rectal tenesmus, frequency of micturition, fever, and urinary changes are all pronounced. Pain and frequent urination are the most prominent symptoms. Its seat is suprapubic, whence it may radiate to the sacral region, the perineum and the upper portion of the thighs, it is most constant, but is worse just before micturition, by which it may be alleviated. It is considerably relieved by the recumbent posture, and is aggravated by pressure over the bladder. There is an almost constant desire to urinate. The urine may be opaque or high colored. In very acute cases the urine contains small quantity of pure blood. The specific gravity varying from 1005 to 1030 (in the febrile cases), and contains pus corpuscles, mucous flakes, shreds of disintergrated and exfoliated epithelium, and micro-organism.

The quanity of urine voided in the twenty-four hours may be normal in amount or even slightly in excess of normal. On the other hand, if exfoliation of the mucous membrane takes place, there may occur partial or even total suppression of the urine.

Fever, with or without the initial rigor, persist throughout the attack, but is not of a severe type, save in the septic and malignant forms of the disease, when it may reach 103 to 105. At times the acute cystitis may represent an acute exacerbation in the chronic form.

Diagnosis: Cystitis should be readily recognized from the history of the case, and the frequency of the two almost pathognomonic symptoms, superpubic pain and vesical tenesmus. An examination of the urine will reveal the characteristic clinical features. The percentage of albumin is usually much larger in nephritis than in cystitis.

The prognosis in the milder grades of cystitis is good; the septic and malignant cases offer a much graver outlook. Extension of the process upward toward the kidneys is always serious. Treatment of the cystitis is prophylactic, hygienic, and medical measures.

Prophylactic: Most important is the prevention of the disease, in addition to the usual care of the body, the observance of thorough asepsis during catheterization.

Hygienic: The cause of the disease should be sought and removed, such as calculus—external and internal pressure. The patient should be put to bed. The diet must be regulated, and all irritating highly seasoned food must be forbidden. Alcohol in any form must be forbidden. Give milk diet, the patient should be instructed to drink freely of water and other dilutent drinks. The free action of the skin secured by friction and warm bathing.

Medicinal: The drugs to be employed are the saline laxative and the various mild diuretics and urinary antiseptics to be employed. If urine is acid, hexamethylenamin is the drug that is indicated in 7½ to 10 grains every four hours. In alkaline urine, the most valuable drugs are benzoic, and boric acids, and salol. Benzoic acid is best administered in the form of ammonium benzoate, which may be given in 10 grain doses thrice daily. It is best to acidify the urine by giving acid sodium phosphate, and then give hexamethylenamin. Hot applications and hot local bathing (sitz-bath) will do much to relieve the pain and tenesmus, if these be severe, a rectal suppository of opium and belladonna or an enema of chloral hydrate will generally give prompt relief. Tincture of cannabis indica, administered internally, may answer if opium be contraindicated.

Spontaneous Cures of Cancer.—Previous instalments of Roncali's review of this subject have been summarized as they appeared. He cites ninety-eight articles, his final conclusion being that a natural or spontaneous cure of true malignant disease has never been demonstrated. In extremely exceptional cases the primary cancer may retrogress when metastases develop, but the malignant disease as a whole continues its course.

ACUTE DELIRIUM FOLLOWING CATARACT OPERATION. CASE REPORT.*

By Adolph O. Pfingst, Louisville.

I wish to briefly report a case not very common in ophthalmic practice and of a type which general medical men seldom have an opportunity of seeing. I refer to acute delirium following a cataract operation.

On November 7th, 1922, I operated upon a woman, sixty years old, for unilateral senile cataract. As usual after such operation both eyes were bandaged. When seen on the second morning after the operation she talked somewhat incoherently but replied to questions promptly and intelligently. That evening I was hurridly summoned to the hospital by a message stating that the woman was crazy, that she was tearing her hair, tearing the bed clothes, trying to get out of bed, talking wild about the house being on fire, about someone coming after her, etc. When I reached the hospital she still responded to direct questions, and then lapsed into a state of delirium. I had the bandage removed from the eye which had not been operated and with which she could see and within fifteen minutes she was perfectly quiet and rational.

We do not know why this type of psychosis sometimes follows the closure of both eyes. Relief is usually almost immediately when the good eye is uncovered.

I have observed several similar cases. I recall one man who left his bed, tore pictures from the wall, smashed furniture, toilet articles from the washstand, etc. As soon as the bandage was removed from his good eye he became quiet and had no further symptoms.

It may be interesting to mention in this connection that I have seen three cases of acute mania following cataract operations. These are of course a different type of cases from the case just cited and the removal of the bandage does not give them relief. One of the two patients afterward committed suicide and another died in about a month in acute mania.

DISCUSSION.

W. E. Gardner: Most people who develop mental disturbances or psychoses under circumstances such as mentioned by Dr. Pfingst possess an unstable nervous system or have a neuropathic tendency, and in such individuals shock often induces more or less mental excitement.

It would be interesting to know the history of Dr. Pfingst's patient prior to the operation, i. e., whether there had been any tendency toward hysteria, depression, or marked introspection. I can imagine that persons with both eyes covered begin to contemplate how serious it would be should they become totally blind, and this idea being forced on them rather suddenly they are unable to adapt themselves to it. People who become blind gradually have already adapted themselves to the idea and do not develop mental symptoms as a result.

It is interesting to note that Dr. Pfingst has seen several cases of acute delirium following cataract operations in which ordinarily shock is slight, certainly not sufficient to induce post-operative psychosis.

*Reported with exhibition of patient and roentgenograms before the Jefferson County Medical Society, October 23, 1922.

MULTIPLE OSTEO - ENCHONDROMA,* CASE REPORT.

By Isaac A. Arnold, Louisville.

The boy before you is twelve years of age. He is the subject of multiple osteo enchrondroma nearly every bone in the body being involved.

There are two reasons for exhibiting the patient: (1) the osteo-enchondromatous lesions are the most numerous that I have ever seen, and (2) there seems to be a family history of the affection extending backward to his great-grandmother in the paternal side.

It will be noted the largest lesion is situated on his left scapula; this was first noticed when the boy was two years old; the others have appered from time to time since; all the lesions have gradually increased in size. The one on the scapula is now nearly the size of an orange. The next largest is in the popliteal space. I exhibit several roentgen-ray films which show distribution of the lesions.

The etiology of these bony growths appears to be unknown. The prognosis, so far as life is concerned, is good. So far as I am aware there is no effective method of treatment except excision of the growths when the area becomes painful from pressure effects. This may eventually become necessary in the case reported. This refers especially to the growth in popliteal space.

*Clinical report before the Louisville Medico-Chirurgical Society, November 10th, 1922.

Glycosuria of Pregnancy and the So-Called Renal Diabetes.—Motzfeldt warns not to underestimate a seemingly renal diabetes; it may change into the real form. In one case with hypoglycemia, hyperglycemia was found when reexamined one year later. He discusses a case of renal diabetes occurring during pregnancy, and recurring at a later pregnancy. In a man of 27 the renal diabetes was transitory. In the third case there seems to be a connection between the diabetes and a traumatic neurosis.

THE SURGICAL CONSIDERATION OF EMPYEMA*

By John W. Price, Jr. Louisville

In this paper it is my intention to write of my experience with empyema rather than make a review of the literature of this interesting disease. Empyema is a term to be applied to that condition where pus-producing bacteria are present in fluid in a pleural cavity. Empyema is usually secondary to some other disease, or injury to the chest. I have seen it occur most frequently after influenza, measles, pneumonia, tuberculosis and gun shot wounds and trauma of the chest. It may also occur in association with pericarditis, peritonitis, osteomyelitis (of any bone in the body) diphtheria, scarlet fever and small pox. I have also seen a subphrenic abscess rupture into the pleural cavity. Cultures of the pus have shown the pneumococcus, streptococcus, streptococcus-hemolyticus, staphlyococcus, albus and aureus, the bacillus coli communis and others. Guinea pig inoculation has proven the presence of the tuberculosis bacillus in some cases.

The diagnosis of an empyema is usually easy for the attending physician who has been treating a patient with one of the above mentioned diseases or injuries to the chest, if he has been on the lookout for it. In these conditions the chest should be examined daily, or twice daily, for the presence of fluid—this finding of fluid should be confirmed by the aspirating needle and the obscure cases should be x-rayed. Sometimes the fluid, with pus organism present, develops within the pleura suddenly and unexpectedly. I saw a large number of such cases at Camp Taylor in the winter of 1917 and January, 1918. The patients had previously been treated for measles and influenza and had returned to duty in good condition, but shortly thereafter they were re-admitted to the hospital. Some had empyema when admitted (although they had drilled in the forenoon) and others showed pus in the pleura 12 to 24 hours later.

A subphrenic abscess may be mistaken for an empyema, but a careful history, physical and x-ray examination will usually be sufficient to make the diagnosis.

TREATMENT

The treatment and after treatment of empyema have been much discussed, especially because the mortality and morbidity was so high during the influenza epidemic of 1917-1918. The question which arises to the minds of all is: "What have we learned as a result of all this experience?" Did the surgeons who did the work in 1917-1918 learn more by their experience than had been learned by the surgeons two thousand years ago? Or, did they learn more than had been known and practiced in the past fifteen or twenty years? I think that very little has been added to our knowledge on this subject. For our success, we must continue to depend upon the old teachings—the very same that were taught years ago by Hippocrates. He taught early dependent drainage, and cleanliness, packing of the wound with linen, drainage by tube, irrigation by warm wine and oil.

From our experience we can but emphasize these points:

1st. Early dependent drainage.

The surgeon should not be called upon to treat old cases of empyema, because as soon as the diagnosis is made the patient should be treated by the surgeon.

A subperiosteal resection of a rib or two at the most dependent point should be done under local anesthesia, adhesions should be broken up, caseous material should be removed and a rubber tube inserted and a thick pad applied immediately to prevent air being sucked into the chest. We have all seen the shock present in sucking wounds of the chest disappear like magic when those wounds are closed and we must apply this knowledge in treating empyema.

Recovery of the lung to normal depends largely upon preventing prolonged collapse of the lung, due to either the pus or air in the pleural cavity. Attention to this point cannot be too strongly emphasized. This collapsing of the lung after the pleura has been opened can be demonstrated very easily by inserting the finger into the pleural cavity and feeling the lung which will expand promptly when the inserted finger is surrounded by gauze in sufficient quantity to plug the pleural opening. Therefore, if one small, loose pad is applied over the drainage tube, or if there is leakage of air about a tube which is run into a bottle of antiseptic solution, or if the tube be placed in a bottle without any solution the lung will continue to stay in a state of collapse, obliteration of the cavity and healing of the fistula will be delayed and a secondary operation may be required.

Drainage by repeated aspiration followed by resection of a rib when the fluid has become frankly purulent is the best treatment for empyema due to streptococcus hemolyticus associated with severe broncho-pneumonia. The after treatment is to sterilize the pleural cavity with Dakin solution. On the other hand, in cases of post-pneumomic empyema, prompt resection of a rib and drainage is the treatment of choice.

Most surgeons have had to operate on some old empyema which had been previously

treated by aspiration and many of these cases died, which might otherwise have been saved by an early thorough cleansing of the pleural cavity of its pus and cheesy material which cannot drain through the needle.

The after treatment consists primarily of cleanliness—this may be accomplished by washing the skin about the incision with soft soap and water and alcohol, and applying frequent sterile pads about the drainage tubes which must also be kept clean and frequently renewed. Irrigations of the pleural cavity by Dakin solution may be helpful in certain cases in the hands of the expert. I have seen very distressing results from the use of Dakin solution which was not properly prepared. These cases came to autopsy and it was the opinion of the pathologist that the Dakin solution was too alkaline. Its solvent action had intensely irritated the pleura and sloughing had resulted. I saw two such cases at Fort McPherson.

Dakin solution must be freshly prepared by the expert to be used in the pleural cavity where the surgeon cannot see what its action is. He cannot know what harm it has done until it is too late. I have seen some cases make remarkably short recoveries, which were being irrigated with Dakin solution, but for my part I prefer not to use it routinely. For routine use, if any irrigation is neeessary, I prefer salt solution.

Some cases treated by irrigation had delayed healing and I felt the solution was irritating to the pleura. Hemorrhage into the pleural cavity and bronchial fistula have followed the use of Dakin solution in some cases. —Heuer. (1).

Dependent drainage and cleanliness will bring about a quick recovery in most cases.

In those cases which must be drained by a rubber tube for a long time, erosion of the ribs takes place due to pressure of the tube.

Another accident we must beware of is the slipping of the tube into the pleural cavity. This usually occurs when the rubber tube is of poor quality and the safety pin or suture, which has been used to prevent this accident, has cut through the tube. In the following case this accident occurred and it was necessary to remove the tube while the patient was in a critical condition.

Mr. M. A., referred to me by Dr. Cuthbert Thompson, November 11, 1914. He had been under treatment for pulmonary tuberculosis for a number of years and had been having pulmonary hemorrhages off and on for a period of six years.

In May, 1913, he was operated upon for empyema of left side of chest. Since which time, or for a period of about eighteen months, the pleural cavity has been drained by rubber tubes. On the morning of November 11, 1914, the safety pin in the end of the rubber tube tore through the rubber, which was of poor quality, and the tube slipped inside of the pleural cavity. At the time of my examination the patient was in a very critical condition. He was expectorating blood and he said he had been expectorating blood for the past two weeks. The skiagram made by Dr. B. W. Bayless showed the rubber tube to be in the posterior part of the pleural cavity.

Under gas and oxygen anesthesia the ninth and tenth ribs were exposed posteriorly, sections of the ribs three inches long were removed, the rubber tube was located and removed. The pleura was found to be one-half inch thick. The rib about the drainage opening was eroded more than one-half of its diameter. Drainage was inserted and the wound partly closed.

Patient was discharged from hospital and went West for further treatment. The fistula had not closed.

For those cases which have permanent fistula, some operation of the Schede type must be performed which may be discussed in another paper.

(1) Heuer-Keen's Surgery, Vol. VIII, Chapter XLI, Pagea 399.

DISCUSSION:

John H. Blackburn, Bowling Green: I feel we cannot accuse Dr. Price of sounding any radical note in the treatment of empyema because he has carried us back to the time of Hippocrates. In those days wine was used. I am sure he does not use oil, but other measures in cleansing pleural cavities. I think empyema, particularly as found following the pneumonias, is a variable thing and dependent on the bacteriology of the particular pneumonia.

I saw the epidemic in 1917 and 1918, as mentioned by the doctor, in a Texas camp, where we had a number of cases of varying types and I recall that the outlook in these particular cases of empyema was frequently prognosticated by the culture and the bacteriologic diagnosis at the first aspiration. I recall one fellow in whom, with the assistance of the medical chief, I aspirated the pericardial cavity and withdrew 700 c. c. of hemorrhagic fluid from the pericardial sac. We recovered from this fluid the hemolytic streptococcus. The following day I aspirated one pleural cavity, the next day another. The poor fellow died on the fifth day. At the postmortem examination the pericardial sac appeared to be filled with scrambled eggs; that describes it more accurately than anything I can tell you. He had two pockets of pus in the

right lung, one in the left, and two pockets of pus in the peritoneal cavity about the liver and subdiaphragmatic space.

In a case of that kind, the outlook, of course, is absolutely hopeless.

We had other cases that were due to the ordinary streptococcus, and these were more hopeful. We had a few cases due to the pneumococcus. In some cases other organisms that attended that particular epidemic predominated.

In the fall of 1918 I observed a number of cases with the same type of infection, but we were not fortunate enough at that particular time with our laboratory to culture these, but we had the varying types. After I returned home in February of 1919, I had on hand at one time three cases that were diagnosed by the State laboratory. In one case that I aspirated the odor and gas that escaped served to establish the nature of the infection B. coli. That patient had a stormy period and died after the resection of two ribs and after an attempted clearing up of the pleural cavity, in the meantime having developed a bronchial fistula.

I had another postinfluenzal case that showed pneumococcus infection that recovered with aspiration alone. She was rather slow in her recovery, had only a limited quantity of pus, about two ounces, but ultimately recovered.

A third case had the pneumococcus and the streptococcus mixed. This type of case required aspiration, drainage, and irrigation, but ultimately recovered.

I should like to emphasize the point that the bacteriology of the case will frequently govern the outcome of the case.

John R. Wathen, Louisville: I am sure we have all enjoyed Dr. Price's excellent paper, and in the main I think we all fully agree with everything he has said.

I want to suggest three points that Dr. Price has had some trouble in overcoming. One how to get the rubber tube which still lies in the pleural cavity without making an incision in the back, such as he resorted to, and of doing another operation. Simply introduce a small catheter into the opening, fill with strong salt solution, and when the water reaches the place opposite the opening the tube will float out of itself because rubber is lighter than the salt solution.

With regard to obtaining the Carrel-Dakin solution, it is almost impossible to obtain it correctly made, and unless you get it from a special chemist, it is rather uncertain. We have on the market "Hyperhlorite" which is sold in every drug store and in concentrated form, and for practical purposes, it is probably as good as almost anything.

In regard to the operation itself, I do not resect the rib. Dr. Murphy, a few years before he died, impressed upon us this point in speaking before a medical society, namely, he said any fool can resect the ribs and open the pleura, but it takes a good surgeon to close the opening later.

A point I wish to draw attention to is to make the opening between the ribs by injecting novocain, making a slight incision with scalpel, introduce a trocar, and thrust in a large catheter, and then withdraw the trocar. This No. 25 French catheter will enable you to handle these cases. You wash out with Carrel-Dakin solution with a small syringe and leave a small amount of the solution which will dissolve the hard clots, pus and liquify the other material. It will also allow you to place suction after you wash out the cavity. You draw out the air and with one of Crile's clamps close the catheter and hold to the side with a piece of adhesive plaster. At present I treat all these cases that came into the hospital with this method. The bed is not soiled; you do not need gauze, but a piece of adhesive plaster to hold the tube. It is perfectly clean, and the results are good.

I heartily agree with the essayist as to the importance of bringing out the lung, and this vacuum process does bring it out in a very effective way.

J. Garland Sherrill, Louisville: Nature attempts to cure pneumonia by filling the chest with fluid, keeping up the congestion, and nature's plan is by pouring out serum in the chest. If you draw off the serum, there is another outpouring of serum from the lung, carrying bacteria with it. The best method of treating pleurisy is not to have it, namely, to prevent it. It is important to know, if possible, what caused empyema and pleurisy. In the epidemic we had during the concentration of men in certain localities, bringing the boys from their homes to the barracks, apparently some of them were immune to bacteria, while others were not. When the men were closely confined they had attacks of rhinitis, catarrh of the bronchial tubes, pneumonia and pleurisy. The place to stop it is before it begins. If you are going to take men into a camp, see that there is proper ventilation, and plenty of fresh air, and do not let the men sleep so close together that they breathe the atmosphere of their associates and cough into each other's face. We want more ventilation, more fresh air, and less concentration.

Influenza and measles were the two main diseases in the army that brought on pneumonia and empyema. Following these diseases a pneumococcus infection was often ingrafted. The pneumococcus will live but a short time in the presence of the streptococcus, as the latter is of more vigorous growth. The pneumococcus lives where there is no great amount of other bacterial flora. Streptococcus infection is present in severe cases resulting in pericarditis,

pleurisy and peritonitis. Children with empyema get well with simple aspiration.

I have observed these patients when they were suffering from a virulent general sepsis due to the streptococcus, with a general peritonitis, and general pericarditis, and treatment has not done any good. Treatment does not afford relief because the patient has gone beyond the point of relief.

The cases due to the streptococcus hemolyticus were of great severity in many camps, the death rate ranged from 50 per cent in some instances to 90 per cent in others. That was due in part to the virulence of the epidemic which gradually diminished, and as time passed on the mortality was reduced very materially. We attributed the reduced mortality in part to the virulence of the infection but very largely to the fact that we treated cases better than they were at first, because the crowding of the men was less, and the men acquired more or less immunity to the organisms.

F. T. Fort, Louisville: Dr. Sherrill brings up a point relative to the virulence of the different diseases in the army. I do not believe any army man after January, 1918, saw a real septic empyema. The troops came in by the thousands in the beginning of August and September, 1917. Severe cold weather came in October and November. Measles broke out in the camps and the hospital wards became crowded and even tents were used. Empyema developed following measles, and the mortality varied from 50 to 75 per cent. These patients were thoroughly toxic and died from sepsis within seventy-two hours. Doctors did not have a chance to operate on some of them, and when they did operate they found the streptococcus hemolyticus, sometimes viridans, and the staphylococcus. I believe it requires as much judgment in the choice of treatment of empyema as in any other surgical condition. Where we have a simple pneumococcus or influenzal infection, I do not believe it is necessary to resect a rib. I believe Murphy's method will cure half of these cases, which is drawing some of the fluid and injecting a formalin and glycerin solution. As Dr. Blackburn says, each case is variable, and I think there should be a bacteriological study made of the kind and nature of the offending organism, and judgment should be used in treating these cases, after you have found out what organism you have to deal with. I think you should either evacuate the pus, or withdraw a certain amount of the fluid, and then use formalin and glycerin injections. I do not believe in temporizing with the Mozingo method or with any of those methods of going in between the ribs. The objection I have to going in between the ribs is that you have the nerve supply running up and down either side of the angle of the ribs, and neuritis will develop if the tube is kept in too long. Two or three days is alright, but the chances are if you put in a tube and aspirate and use formalin and glycerin, the patient will get well without a resection. I believe in using a large tube and of sewing the tube in, putting a pad on there so as to have it tight and guard against leakage; a tube three or four feet long may be used, attached to a bottle containing boric acid; hydrochlorite or the Carrel-Dakin solution can be used for irrigation every two hours; put the solution in the lung, put forceps on the tube, then take the forceps off, hold it for fifteen minutes in boric acid, and leave the tube so that there is no contamination. You have the end of the tube in an aseptic solution, and I think out of the number of cases I saw at Fort Riley, where we had 90,000 men in 1918, we had considerably less mortality, but I do not think the decrease in mortality was due to the change in technic, but to the virulence of the organism and empyema following measles had a higher mortality than that following influenza. In some of these cases you do not have as much pathology as in others, although a mediastinitis was usually found postmortem. Some of these patients, although they were drained imperfectly would get well, while others would die in spite of any treatment that you carried out. Postmortem examination would reveal that the cavities you had drained were healing nicely, and if you dislodged the heart and lungs, you would find abscesses in the mediastinal space.

William A. Jenkins, Louisville: The essayist says that whenever pus is discovered in the chest, with an empyema existing, the case should go to the surgeon. That cannot be accepted as a universal rule. In all cases where there is an interval between the acute inflammatory process in the chest, such as pneumonia and the appearance of empyema, that holds good. It holds good where the empyema is secondary to other disease processes in the body. But the kind of cases we saw in the army camps were those where the boys died in three or four days. It was not at all desirable to operate on these cases. I was probably the first man to pick out a case that had empyema in one of the largest camps in the country. At first, as soon as empyema was discovered, these patients were shipped over to the surgical side, operated on, and died rapidly. In cases of that kind, where the local process in the lung was violent, these patients were deprived of all resistence in such a rapid manner that it was a mistake to subject them to a surgical operation. It is better to do the best you can for the pneumonic process where there is a simple infection or a mixed infection, and tide these patients over the critical period, and as soon as nature shows resisting power after considerable improvement in the patient, adopt some sort of operation later. If the amount of fluid is extreme, and it must be in certain cases, with a small needle and

large syringe one can withdraw a certain amount. While keeping down the fluid a little, you assist nature in forming a sort of sac, thus protecting the lung and not generalizing the infectious process.

Proper drainage is the keynote of the whole situation. If you can get the pleural cavity clean and keep it clean, the patient will get well. It matters not what kind of operative procedure you have adopted. On the other hand, it does not make any difference as to the type of operation you do, a certain percentage of these cases will not get well. Secondary generalized infection takes place. Resistance is lowered and the patient succumbs.

A. D. Willmoth, Louisvile: I listened with a great deal of interest to Dr. Price's paper on empyema following pneumonias, and in most instances I wish to fully concur in what was said by him and by those who followed him. Like Dr. Wathen, I do not believe in the resection of ribs in these pneumonic cases, as a rule, if you can get all the drainage you want. That can be accomplished by resection of ribs by going in between the ribs with a tube through a trocar that is large enough, which is easy to be had at any of the instrument houses, and you get any amount of drainage through the tube with a local anesthetic, and if you so desire, this can be done with the patient in bed.

I listened with great interest to the arrangement for keeping up the vacuum, and in this connection I would like to mention a simple plan. You can attach to any tube a Politzer bag that can be bought at any of the instrument houses; you can get all the suction you want. You know when the bag is filled with pus by the bag becoming distended, and you can take it on. The bag is made of good quality of rubber which can be boiled, and during the time the tube can be held in with hemostatic forceps, and arrangements can be made to get all the vacuum you want.

It keeps the patient clean. It can be used in any home at any time.

With regard to the use of glycerin and formalin referred to by one of the speakers, I want to throw out this caution: do not put glycerin and formalin in a pleural cavity that has not been mixed for twenty-four hours. If you do, you will inject pure formalin in the mixture and get a terrific irritation that will give the patient a terrible reaction. Murphy called attention to that, and one of the text books on the market today that has been sold several years tells you not to use it after it has been mixed twenty-four hours. That is a serious mistake. Do not use it until it has been mixed. If you want to get a soluble preparation, it must be mixed twenty-four hours before it is put into the pleural cavity.

In the pneumococcic cases, aspirate, an inject formalin and gylcerin, wait four or five days, and as a rule you do not need further treatment. When you drain through a tube you invite outside infection, and you may get a streptococcic or staphylococci infection, and it is then difficult to relieve the patient.

I have used a simple method (it is not original with me) of putting the patient under an anesthetic, and if able to stand it, introducing a urethral sound through the original opening, placing the tip of sound posteriorly with the end of the sound between the ribs and cutting down on it, reaching the most dependent part of the cavity. You put one tube in front and another behind, then with irrigation you can keep the pleural cavity clean, and that case will heal nine times out of ten.

Irvin Abell, Louisville: I desire to emphasize one or two points that have been made by Dr. Price. I find myself heartily in accord with what he has said, and I will not go into the different types of empyema as we observed them in the concentration camps and those we observed in civil practice. These cases presented different features.

One of the practical things I wish to emphasize, as brought out by Dr. Price, is the diagnosis. It is essential that a diagnosis be made early if simple drainage is to be effective in producing a cure.

With reference to treatment, I wish to say that an empyema that has existed for three or four days is an entirely different proposition from one that has existed for six weeks and will require different methods of treatment. I would emphasize, first, the importance of a diagnosis being made early, and in order to do that I have found two of the most valuable aids to be the x-ray and the exploring needle. Physical examination in my experience has been deceptive, as far as auscultation and percussion are concerned. We have misinterpreted the x-ray plates in the presence of a thickened pleura. If you take a combination of x-ray, the fluoroscope, and the exploring needle, you will not make the mistake of opening one cavity and leaving another in some portion of the chest. I prefer rib resection under local anesthesia and at the lowermost angle of the cavity. If it is done early and you are sure you get the dependent portion, it does not make much difference whether you use irrigation or not. These cases all get well. But drainage to be effectual must be at the lowermost point. Cases treated early in this way in my experience have had no difficulty in getting well. When the case comes under observation late, after marked compression of the lung has accurred and after new tissue formation will prevent lung expansion and consequent obliteration of the abscess cavity, the problem of treatment is not such an easy one.

John W. Price, Jr., Louisville (closing): In the first place, I wish to thank the members of the Association for their free discussion of

my paper. I have enjoyed it as much as any of you.

I should like to call attention to a point Dr. Blackburn made about the wine that was used in connection with the treatment by Hippocrates. I did not say I was using wine. Unfortunately we cannot get it, but Hippocrates did get it. We all know of the alcohol in wine, and there is hardly any solution we can use on an open wound that will sterilize it so quickly as alcohol.

As to the resection of ribs versus putting a tube in between the ribs, draining as suggested by Dr. Wathen, in the first paragraph I spoke from my own personal experience, and not a review of the treatment as described in the textbooks and literature.

When I was at Camp Taylor in the surgical service we practiced resection of ribs in cases of empyema. We were able to break up adhesions by inserting the finger into the pleaural cavity, so that when the fluid was removed from the pleural cavity the lung was able to expand, able to come into opposition to the chest wall, and, it seems to me, that was a very necessary part of the procedure. Our cases did very well.

The next place I saw cases of empyema treated was at the Rockefeller Institute. There they were using Dakin solution. In some of the cases we resected ribs; in others we inserted a tube or a trocar, passing the instrument inside of a Dakin tube, inserting it up to the top of the cavity. In some cases we inserted three or four tubes into the cavity. I saw some of those cases do well; some of the cavities closed under treatment. Bacteriologic examination showed them to be free from bacteria, but in a short time they opened again and had to be drained a second time.

The next camp where I had experience with different methods of treating these cases was at Camp McPherson, and when I arrived and became connected with the surgical service there, they were treating cases by introducing a tube between the ribs. I saw more autopsies at Fort McPherson than in any other camp where I was on duty. These cases at autopsy showed that the adhesions between the ribs and pleura were not broken up. An attack was made against the use of Dakin solution unless properly prepared by an expert.

My chief objection to draining these cases with a rubber tube between the ribs is that you cannot remove the cheesy material so commonly present in a tuberculous empyema or in an empyema due to the sheptococcus yon do not have adhesions composed of cheesy material.

In regard to the remarks of Dr. Jenkins, that these cases should be turned over to the surgeon as soon as a diagnosis of empyema is made, I will say that of course if the medical man is going to use a surgical procedure, which is to drain the case, I have no objection to that, but there are medical men who in using a hypodermic syringe for drainage purposes are not careful about asepsis, and for that reason a large run of cases would do better in the hands of a surgeon. In the type of case Dr. Jenkins spoke of, where the mortality is high if operated by a surgeon immediately, those cases should be drained by the aspirating needle for a series of days, and during that period the patient has a chance to build up a certain amount of resistance, and subsequently under a rib resection he gets well. It is true, if you take those cases in the hands of average operators throughout the country, and resect a rib, the mortality would be higher than if you had aspirated them for a few days and did rib resection at a later time.

As Dr. Abell mentioned, we should distinguish between a new case of empyema and an old one. By new cases we mean one that comes on within a few days after the onset of the disease, and the old cases which have been in the hands of the family doctor or general practitioner for a period of several weeks. The old cases must have rib resection, and the new cases can be drained, and many of them will recover from simple aspirations, but it is dangerous to rely solely on aspiration.

CORRECTIVE RHINOPLASTY.*

By Guy Aud, Louisville.

Corrective rhinoplasty is usually performed for cosmetic purposes rather than restoration of function; and, probably for this reason, is frequently not given the place in surgery to which such technically difficult operations are entitled. However, increasing interest is being manifested in all kinds of plastic surgery as a result of the refinement of surgical technique and a better understanding of the fundamental principles which furnish the keynote to plastic surgery.

Time will not permit discussion of the various types of nasal deformaties that are now successfully corrected by operative measures. I will present for your consideration two common deformities of the nose; namely, saddle nose and rhinophyma, which may be so disfiguring as to require correction for economic reasons, as occurred in two of my cases who were unable to procure employment because of their unsightly deformity.

SADDLE NOSE

According to Carter, the most frequent causes of this deformity are: (1) congenital defects; (2) traumatism; (3) the submucous operation, due either to faulty technique or

*Read before the Kentucky State Medical Association, Paducah, October 16, 17, 18, 19, 1922.

infection following the operation; (4) abscess of the septum; (5) atrophic rhinitis; (6) syphilis, tuberculosis, lupus, etc.

Paraffin was probably the first foreign substance used in the correction of this deformity, but soon fell into disuse as did later gold, silver, and aluminum. Celluloid splints have been used by New in a large series of cases with splendid results. While the various substances enumerated may heal in, they are foreign bodies and are frequently not well borne by the tissues of the nose and are often extruded.



Figure 1. Showing portion of costal cartilage used as transplant.

Dorsal or bridge splints of autogenous grafts of bone or cartilage are now almost exclusively used in the correction of the depressed deformities resulting from deficiencies in the framework of the nose. Carter believes the best results are secured by using autogenous periosteum-covered transplants of bone and placing them in contact with live bone, the periosteum of which is elevated at the point of contact with the transplant.

Frequently a properly applied dorsal splint is sufficient to restore the normal contour of the nose. In saddle nose, following septal abscesses where the loss of the entire quadrilateral cartilage has taken place, Cohen prevents the lower end of the transplant from tipping down by introducing a thin section of costal cartilage, of desired shape, which rests on the anterior nasal spine below and against the dorsal graft at the tip above. In those cases in which it is necessary to lower the tip and place it on a proper plane with the bony dorsum, he removes a section of the mobile septum sufficient to produce the desired replacement. The width of the nose may be reduced by excising a portion of one or both of the lateral cartilages depending upon the amount of overgrowth.



Figure 2. Case 1. Before operation. Broad, flat nose with marked bulging on left side.

Great care should be exercised in the selection and preparation of cases upon which this operation is to be performed. Syphilitic subjects who show a positive Wasserman reaction should not be operated upon under any circumstances. Severe infections involving the conjunctiva, lachrymal apparatus, the nose or accessory sinuses preclude operation. In those cases in which the deformity has followed necrosis, bone transplantation should not be attempted in less than six months after the infection has subsided.

One should always be guarded in his prognosis. The patient should be informed of the possibility of infection which may result in loss of part or all of the graft. Again, the patient may be greatly disappointed to find that the deformity has been slightly over-corrected or under-corrected. In this, as in all other surgical procedures we cannot always expect ideal results.

In the cases I am reporting the transplants were of cartilage which does not become attacked to bone, but while remaining slightly movable, have retained their position perfectly. I am unable to detect shrinkaye in the transplanted cartilages, one of which has been in place six years. Undoubtedly the combined bone and cartilage transplant used by Carter and Cohen has distinct advantages. The section of rib, usually the eighth or ninth, is removed at the costo-chondral junction so that the upper two-thirds of the graft is composed of bone and the lower one-third of cartilage. The upper part becomes firmly attached while the lower remains slightly flexible with the mobile part of the nose.

In procuring the transplant the patient is given a general anesthetic and placed on the left side. The operative field is prepared with the same degree of care as for any other major operation. Beginning at the costo-sternal junction a three-inch incision is made extending along the seventh rib. The skin is covered with towels so that the chemical agents used in cleansing it cannot come in contact with the graft. A section of costal cartilage about two inches in length is exposed and if the deformity is sufficiently great to require the entire thickness of the rib to correct it, as my cases did, a section of rib is resected. With proper precaution the pleura should not be

empyema which may follow such an accident. The transplant is kept in warm saline solution while the wound is being closed. The opened in removing the transplant; thus avoiding the unfortunate complication of



Figure 3. Case 1. Before operation. Note the marked flattening between the eyes.

patient is now placed upon the back, with the head slightly elevated, and the nose is prepared for operation by an assistant while the transplant is being trimmed. After the iodine used in preparing the skin has dried, it is washed off with alcohol. The eyes are protected by small gauze or cotton pads moistened with boric acid solution. These pads also prevent the operative field from being soiled by the conjunctival secretions. Drapes are arranged so that only the nose is exposed.

In some instances it is possible to procure a photograph of the patient taken before the deformity occurred. This should be studied carefully and the transplant trimmed so that it will restore, as nearly as possible, the normal contour of the nose. The transplant should not be handled, even with the gloved hands, more than is absolutely necessary.



Figure 4. Case 1. Three weeks after operation. Scar barely perceptible.

The nose is now prepared for the reception of the graft. A transverse incision, one-half inch in length, is made across the nose in the natural crease between the canthi. With a blunt instrument the skin is undermined from the frontal bone above, to the tip of the nose. Care must be taken that the nose is not perforated. This would result in infection and loss of the graft. The bed should be of such



Figure 5. Case 1. Three weeks after operation.

size that the transplant will fit into it snugly in order to control bleeding and hold it firmly in position. The transplant is grasped at its upper end with forceps, the wound being held open with small solid blade retractors so the transplant will not come in contact with the skin, and is pushed into the bed prepared for it. No blood vessels need be ligated—pressure on the graft being sufficient to control bleeding. The incision is closed with two or three sutures of horsehair and the wound protected by a few drops of Tr. Benzoin Comp. on cotton. The patient need not remain in bed more than one or two days but should be kept under observation for several weeks.

Case 1. Female, age 30. Congenital syphi-



Figure 6. Case 1. Six years after operation. Graft has retained its position with no apparent change in size or shape.

lis. Was well until six years ago when she developed a severe dacryocystitis, following a slight injury, which necessitated removal of the left lachrymal sac. Later the nose became involved, accompanied by an extremely offensive odor and necrosis of the nasal bones. After two years of intensive antisyphilitic treatment the Wassermann was negative.



Figure 7. Case 1. Six years after operation, note almost complete absence of scar.

Operation was performed February 20th, 1917. Wound healed primarily. Has worked regularly since operation in a public position and says no one notices any deformity.

Case. 2. Male, age 21. Received a crushing injury to the nose when eight years of age which resulted in marked depression and flattening of the nose. Wassermann negative. Operation performed September 8th, 1920. Wound healed primarily. Unfortunately the photographs of this case taken before operation were not developed until after the deformity was corrected and were found to be very poor.

In these cases, the first of which was operated upon nearly six years ago and the second more than two years ago, the grafts have retained their position and show no change in size or shape. The cosmetic results are as satisfactory now as at first. Both are delighted with their present condition, are no longer self-conscious over their deformity and are able to gain a livelihood.



Figure 9. Case 2. One year after operation. The deformity in this case was almost as marked as in case 1.

I wish here to express my appreciation of the splendid work done by Dr. H. N. Ritter in the preoperative treatment of these cases



Figure 8. Case 2. One year after operation. Photographs were taken before operation but were not developed until after the deformity was corrected and were defective-



Figure 10. Case 3. Before operation. Entire nose enlarged. Interfered with reading.

and also for his valuable assistance during the operation.

RHINOPHYMA

The second type of nasal deformity that I shall present is one in which the nose is enlarged and distorted by excessive hypertrophy of the connective tissue elements of the skin and subcutaneous structures. Rhinophyma



Figure 11. Case 3. Before operation. Showing pendulous nose and growth moving the ali.

results from the prolonged irritation and hypernutrition following acne rosacea.

Stelwagon says the increased vascular dilatations are due partly to the chronic hyperemia, and also to a blocking-off of some of the return vessels from cicatricial formations resulting from follicular suppuration and de-



Figure 12. Case 3. Nine months after operation.

struction. In some of the enlarged vessels the surrounding connective tissue hypertrophies. The veins may be so enlarged as to resemble cavernous tissue. The nose has a cauliflower appearance and dark reddish-purple hue.

Decortication is the operation of choice for correction of this unsightly deformity and may be done very satisfactorly under local anesthesia. The nose is cleansed with benzine to remove the oil and sebaceous secretions and then painted with Tr. Iodine, which is allowed to dry. After thoroughly infiltrating the tissues with 0.5 per cent procain and adrenalin solution, decortication is done with a sharp scalpel. One finger is held inside the nostril to prevent trimming away too much tissue or opening into the nose. The most difficult part of the operation is the shaping of the ali to restore their normal contour which has been obliterated by the growth. Bleeding is readily controlled by hot compresses. The wound is covered with a mild ointment, such as zinc oxide ointment, to prevent the gauze dressing from adhering. These wounds heal very rapidly as each of the numerous sebaceous gland ducts that have been cut across serves as a starting point for epithelization.

Case 3. Male, age 62. Had acne rosacea involving the face and cheeks for many years. Gradual enlargement of nose during past four years. Growth involving right ali began three years ago, and that of left, one year ago. Size of nose interferes with reading and is a constant source of embarrassment. Operated upon December 2, 1921.

The nose was completely covered by epithelium within ten days. He was given the



Figure 13. Case 3. Nine months after operation. Showing normal shape of ali.

usual treatment for acne rosacea in addition to which he received a series of x-ray treatments, thinking perhaps it might improve the acne and also shrink the remaining hypertrophied tissue. The photographs of this

case, taken nine months after operation, will give you a much better idea of the result than any description I might attempt.

SUMMARY

Refinement of surgical technique and a better understanding of the fundamental principles of plastic surgery have made possible the successful correction of many types of nasal deformities.

The costo-chondral graft gives the best results in the correction of the depressed deformities resulting from deficiencies in the framework of the nose.

The slight scar following the external application of the graft is hardly perceptible and the dangers of infection much less than in the intranasal route.

Decortication is the operation of choice for correction of the unsightly deformity of rhinophyma. It may be done very successfully under local anesthesia. The nose heals very rapidly and the cosmetic result is most gratifying.

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DISCUSSION

Stuart Graves, Louisville: I saw the specimen from Dr. Aud's case of rhinophyma, and I should like to say a word about the pathology of it as compared with rhinoscleroma. Rhinophyma is not an infectious condition, but is due purely to hypertrophy of the skin and the glands of the skin, with chronic inflammation, whereas rhinoscleroma is a much rarer disease, due to a specific organism. The case Dr. Aud has shown was a typical one of rhinophyma.

Walter Hume, Louisville: I saw the first case Dr. Aud showed before and after operation. I remember very well the hideous deformity the patient exhibited, and can testify that he got a wonderful result in that girl's case.

I have done little corrective work on the nose, but I am particularly interested in plastic surgery, and I have done quite a bit of it on the face. The point to be stressed is development of the technic to such a point that there is small chance of infection. The slightest infection in the case of placing cartilage in the nose would ruin the results. One should be careful in doing these operations just beneath the skin, and should be especially careful in obtaining and taking care of the cartilage.

I was much interested in Dr. Aud's report of the case of rhinophyma. I have not seen anything like it, and I am glad to see the result he got.

Oscar O. Miller, Louisville: In connection with cartiliage resection Dr. Aud mentioned the fact that there was danger of pyothorax. I was wondering in the cases reported by him, if there is not a greater danger of developing a natural pneumothorax, while dissecting the costal cartilage free.

Guy Aud, Louisville, (closing): In answer to Dr. Miller's question, there have been several cases reported of empyema following this operation. I think, however, they must have been due to carelessness. I cannot attribute it to any other cause. There is no reason why the pleura should be opened if the cartilage is dissected out with care. No mention is made of pneumothorax. I have no doubt pneumothorax must occur in those cases where the pleura was opened, but I presume when once recognized and watched, it will take care of itself and produce no serious effect. Naturally, however, it is a thing that could easily occur.

As to the pathology of rhinophyma, I sent the specimen to Dr. Graves and he has given a thorough description of it from a microscopic standpoint. It is a condition that we do not meet with very often. It always follows acne-rosacea. About one or two per cent of cases of acne rosacea develop rhinophyma. Acne rosacea is now relatively common, but inasmuch as only a small per cent of those who have severe acne rosacea develop rhinophyma, it must be rare. I have seen possibly four or five cases.

Dr. Hume in his discusion emphasizes the point I brought out in regard to asepsis, and that is true of all surgery where you are transplanting tissue. It is true of bone transplants of all kinds; it is true of fascial transplants and transplants of muscle, fat, etc. The transplanted tissue must be handled very delicately and in a way that it is not likely to become infected. Infection in these cases means in practically 100 per cent of them that your operation amounts to nothing. In fact, it amounts to a great deal less than nothing so far as the individual is concerned, inasmuch as infection produces scar tissue, and when a second operation is performed, you not only have the deformity you had before, but you have an immense amount of scar tissue to deal with.

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ANNUAL MEETING, CRAB ORCHARD SPRINGS, 1923

COUNTY SOCIETY REPORTS

Allen: The Allen County Medical Society met in called session Monday, December 11, for the purpose of electing officers for the ensuing year. The result of the election was as follows: Dr. Holland was elected President, Dr. L. Graves Vice-President; Dr. G. R. Keen, Secretary-Treasurer; Dr. C. A. Calvert was elected delegate to the State Meeting, and Dr. Miller alternate.

The following committee was appointed to draft resolutions on the death of J. E. Pace: C. A. Calvert, P. G. Graves and G. R. Keen.

There were present at this meeting eight of the twelve members of the Society.

There being no further business the meeting adjourned to meet in regular session the fourth Saturday in December.

G. R. KEEN, Secretary.

Bourbon: The Bourbon County Medical Society held its regular meeting on Thursday, December 21, 1922, at 8 p. m. at the Court House.

The following members were present: Drs. W. C. Ussery, F. M. Faries, C. G. Daugherty, H. M. Boxley, J. A. Orr, J. A. Stoeckinger, Marmaduke Brown, William Kenney, L. Oberdorfer, and M. J. Sterns. Drs. R. Hayes Davis of Louisville, Chas. Vance, R. J. Estill, S. B. Marks, F. M. Massie, Chas. Scott, Carl Wheeler, and McLean of Lexington, were present as guests of the Society.

The dues were reduced from $2 to $1 per year.

The following officers were elected for 1923: H. M. Boxley, President; J. A. Stoeckinger, First Vice-President; F. M. Faries, Second Vice-President; M. J. Stern, Secretary-Treasurer; C. G. Daugherty, Delegate; Wm. C. Ussery, Alternate; Wm. Kenney, J. A. Gilkey and J. T. Brown, Censors. Marmaduke Brown was elected a member of the Society.

R. Hayes Davis read a paper entitled: "Practical Application of Protein Sensitization," which was liberally discussed. Adjourned.

M. J. STERN, Secretary.

Christian—The Christian County Medical Society met in regular session at the Public Library, Hopkinsville, Tuesday, Dec. 19th, with Dr. Bell in the chair. The following members being present, Drs. Bell, P. E. Haynes, Rice, Rozzell, Barnes, Stites, Harned, Barker, Sargent, Gaither, Reynolds, Williams, Jackson, Perkins, Gary, Woodward, Dade, Durham and Sandbach. bach.

The minutes of the last meeting were read and approved and the Secretary read a letter from Dr. McCormack that the State Dues for the next year would be $5.00, and by motion and a unanimous vote our dues were made $7.00.

The Secretary was instructed to write Dr. McCormack in regard to a one Dr. A. R. Risner, having offices both in Hopkinsville and Pembroke,

and without license.

The election of officers for the ensuing year were:

O. L. Barner, President; W. E. Gary, Vice President; W. S. Sandbach, Secretary-Treasurer; S. H. Williams, Censor; W. S. Sandbach and P. E. Haynes, Delegates.

Randolph Dade read an excellent paper on "Gastric Cancer."

P. E. Haynes read a well prepared and interesting case report on "Extrauterine Pregnancy."

Both of these papers were discussed at length by Drs. Gaither, Woodard, Haynes, Reynolds and Sandbach.

W. S. SANDBACH, Secretary.

Carlisle: The Carlisle County Medical Society met in the offices of The Bardwell Clinic on December 5, 1922, with the President, R. T. Hocker presiding, at 10 a. m. The Society was opened with prayer by the Rev. Bell of Trenton, who, with the Rev. W. E. Downs, a local pastor, was present.

The Secretary, Geo. W. Payne, was absent and confined to his home on the account of a fracture of the patella received a few weeks ago. T. J. Marshall was elected Secretary pro tem. After the reading and approval of the minutes of the last meeting, the regular scientific program was taken up.

W. Z. Jackson, Arlington, read a paper on Cystitis. The paper will be published in the Journal.

Wm. L. Mosby opened the discussion, emphasizing the importance of irrigating the bladder in clinic cases but being careful not to over distend the viscus.

H. T. Crouch mentioned several drugs he considered to be of value, laying special stress on Cannabis indica. J. F. Dunn emphasized the value of elimination.

T. J. Marshall in discussing the paper advocated rest, diet and elimination.

W. Z. Jackson, our delegate to the State Meeting at Paducah, made a very interesting report "Of the Doings" of the House of Delegates.

The Society adjourned for dinner to the Richardson Hotel.

Reconvened at 1 p. m., G. A. Gillman of Milburn being absent his paper on "Amenorrhea, Symptoms and Treatment," was passed.

R. T. Hocker presented a bill for $9.70, the cost of printing the "Memorial" to the late Dr. F. N. Simpson, on motion Dr. Hocker was paid the cost of said account.

Next on the program was the election of officers for the year 1923. Wm. L. Mosby was elected President; D. S. Robertson, Vice-President; T. J. Marshall, Secretary-Treasurer.

Next was the address of our retiring President, R. T. Hocker, which will be published in full in the Journal.

A motion was carried thanking the retiring President for his efficiency and his impartial rulings during the past year and for his splendid address.

The Society adjourned to meet in Arlington the first uesday in March at 4 p. m.

Those present: W. Z. Jackson, J. F. Dunn, R. T. Hocker, Arlington; D. S. Robertson, R. C. Burrow, Cunningham; H. T. Crouch, Wm. L. Mosby and T. J. Marshall, Bardwell.

T. J. MARSHALL, Secretary.

Russell: Dog Days and Thanksgving are passed for 1922, but while the frost was on the pumpkin and the fodder in the shock, and eating pumpkin—cracklin bread and half-moon fried apple pies and sweet milk, the thirty-fourth annual session of the Russell County Medical Society was held at the Holt Hotel, Jamestown, December 11, at 10 a. m., 1922.

With Dr. Tartar in the chair as the president, Dr. Gehrken has removed to Georgia. There being no old or new business, proceeded to elect officers for 1923: President, W. G. D. Flanagan; Vice-President, A. V. Neathery; Delegates for two years, J. B. Rowe; Censors, L. D. Hammond, J. B. Tartar, W. G. D. Flannagan; Secretary-Treasurer, J. B. Scholl.

All present paid dues for 1923. There were about two that could not be present but feel sure I will get their dues by mail today or soon. Secretary has visited and inspected and made talks to most every school in Russell County. The physicians of the county were with me great deal of the time doing all they could to help me in trying to teach or show and tell school children how to keep from being sick. There is no epidemics at present, nor not many epidemics during the year, as the school children and those with open ears and minds have come to the conclusion that communicable or catching diseases are caused by germs. I have placarded most every school, store house and public buildings with fly, influenza, spitting notices, etc.

J. B. SCHOLL, Secretary.

Harrison: At the annual meeting of the Harrison County Medical Society, held December 4, 1922, the following officers were elected for the year of 1923: W. N. Carr, President; N. W. Moore, Vice-President; W. B. Moore, Secretary; B. B. Petty, Treasurer; C. T. Swinford, Censor; W. B. Moore, Delegate to State Association.

By rising vote the Society adopted resolution congratulating Dr. C. G. Daugherty of Paris, and the medical profession of which he is an honored member, upon the prompt decison in his favor of the recent unjust malpractice suit which has been brought against him.

W. B. MOORE, Secretary.

KENTUCKY MEDICAL JOURNAL

BEING THE JOURNAL OF THE KENTUCKY STATE MEDICAL ASSOCIATION

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EDITORIAL

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

The necessity for the republication of the article of Dr. Dobson in this issue of our Journal so that all of our members may read it brings to mind a matter about which we should all take thought. The Journal of the American Medical Association is today the greatest medical journal which has ever been printed. It may be as unfortunate as it seems to many of us that it is necessary for it to publish a great many highly scientific articles, which seem to be of no practical value to the practicing physician, but it must be remembered that it is read by 80,000 physicians and it must have articles of interest to all of them. The fact still remains that no issue is ever published that does not contain articles and information without which the medical men cannot keep abreast of the times. We presume that no one except the proof reader ever reads so large a journal in its entirety, but it is rare that an issue does not contain one or more articles which are worth the price of frequently many a year's subscription to the practitioner of medicine. For example, a series of articles are now being published on infant feeding, the careful perusal of which would save the lives and establish a healthy constitution in thousands of babies who will otherwise be lost or have their health permanently impaired; in the same issue with Dr. Dodson's article there is a discussion of the newer treatment of the intestinal parasites, knowledge of which is essential to every man practicing medicine in Kentucky.

Such illustrations might be multiplied indefinitely but these are enough and we desire to urge every member of the Kentucky State Medical Association to write immediately to the Journal of the American Medical Association, Chicago, enclosing a check for $6.00 for Fellowship in the Journal of the American Medical Association and this will bring him this great publication weekly for the year. Every member of the Kentucky State Medical Association is a member of the American Medical Association and this will bring him this great publication weekly for the year. Every member of the Kentucky State Medical Association is a member of the American Medical Association but only those who subscribe for the Journal are Fellows.

THE ABRAMS' CULT

From the letters we are receiving it is apparent that the systematic advertising of the Abrams outfit is calculated to mislead some of our physicians and the Journal desires to call attention to the investigation of this matter which has been made and which leads it to announce to the profession of the State that it is a worthless system of treatment. The State Board of Health of Kentucky has found it necessary to warn several physicians that continued use of this method of treatment would make it necessary for them to be brought before the Board to show cause why their certificates to practice medicine in Kentucky likely to deceive or defraud the public.

Physicians who really want to know the value of this system can get sufficient information on the subject by sending a two-cent stamp to the Journal of the American Medical Association, 535 North Dearborn Street, Chicago, for their pamphlet on the subject.

PREVENTIVE MEDICINE AND THE GENERAL PRACTITIONER.

Last year the Journal presented to the profession of Kentucky epoch-marking paper of Dr. Rankin, the distinguished State Health Officer of North Carolina. In this issue we are presenting an equally important contribution to the discussion of this same general subject under the title of this editorial from one of the most distinguished and thoughtful of our medical leaders, Dr. John M. Dodson, of Chicago. We trust it will be read sympathetically by every physician in Kentucky.

Many years ago, in fact almost before the birth of real preventive medicine, Florence Nightingale had caught the vision of the medicine of the future that would develop not only methods for the prevention of the scourges, both epidemic and endemic, which

were destroying so large a portion of the human race, but of that systematic care of the lives of patients by physicians and nurses which would teach them not only the value of personal hygiene but its methods. Since that time, and entirely independently as a rule, the great leaders of medical thought have more and more laid stress on this necessary development. It has long been recognized by students of the development of the public health movement that the health officer who is going to come into contact with the largest number of people is the family physician. For a while those bureaucrats who controlled our medical education in this country may have so shaped its affairs that physicians have been graduated without adequate knowledge of either or the importance for technique for the practice of preventive medicine. Dr. Dodson, himself one of the greatest of our medical educators, well says that it behooves our profession to take counsel together and advance this phase of medical education while we may yet do so. It is a misfortune that in many states there has developed a large commercial element in the profession that is definitely opposing public health movements. We are proud of the fact that this has never been the case in Kentucky. Our profession has kept itself fully abreast of advances in preventive medicine and has assumed responsibility and leadership for reducing our unnecessarily high sick and death rates. As rapidly as that will educate public opinion we propose to continue this plan. We are now engaged in educating our people as to the necessity for systematic physical examination at regular intervals and are helping the profession to realize the importance of such study of the newer methods of diagnosis as combined with the sure, true and tried one will enable them to detect tendencies towards disease and relieve them while there is yet time.

Dr. Dodson's article is a timely one from every standpoint and our members will do well to have it read by thoughtful public men in their communities.

AN INVITATION FROM OHIO.

The Executive Secretary of the Ohio State Medical Association extends through the Journal a cordial invitation to the physicians of Kentucky to be present during its annual meeting which will occur this year at Dayton May 1, 2 and 3.

Among the features of the program will be an address on "Slit Lamp Microscopy of the Living Eye, Its Aid to Histological Research, and as a Refinement in Ophthalmic Diagnosis." This is a subject of great interest to ophthalmologists, now coming to their attention through the influence and efforts of men like Dr. Von Der Heydt, who is one of the pioneer workers in this field in this country. This address will be delivered on May 2nd at 9 a. m.

On that same day an oration on Public Health will be delivered by Dr. Livingston Farrand, president of Cornell University, former general manager of the American Red Cross and one of the most distinguished lecturers and public health authorities in the United States.

On this day, also, Dr. Joel E. Goldthwait, the distinguished orthopedic surgeon of Boston will deliver the oration in Surgery.

Besides these visitors the profession of Ohio will have a program that keeps up their usual high standards in scientific medicine. Our members are urged to take advantage of this opportunity, if possible.

THE GENESIS OF GREATNESS IN DR. J. N. McCORMACK.

The closing of a life of unusual distinction and success, such as that of Dr. J. N. McCormack, invites a study of the causes underlying the great achievement.

Twenty-five years' knowledge of him, with much of intimate contact, convinces the writer that the departed leader did not owe his success to genius. There was nothing odd about him. His was the well rounded intellect, the balanced mind with no hint of eccentricity suggesting that,

"Great wits are sure to madness near allied
And thin partitions do their bounds divide."

Neither was his success due to very unusual mental endowment. He was of superior mental calibre even among doctors, yet not of that towering intellect that would have distinguished him among professional men.

Nor can it be said that his pre-medical or professional training or profound learning, made him a marked man. His training was as good as his day afforded and well above the average of his time. It was distinctly below the training of many men of later days.

Nor yet can his success be attributed to better opportunity. His remarkable achievements were in public health work and medical leadership. These fields were in his earlier years, fallow and inviting equally to all doctors. He entered upon their cultivation as might any other doctor have done, and pursued the work assidiously and to wonderful success.

What cannot be explained as due to genius or superior intellect or attributed to finer training or better opportunity, is readily understood when we recall that his dominant trait was an intense love of humanity and a

deep devotion to the welfare of his fellow beings.

It was this that set him to the solution of health problems. He saw with sympathetic eye, the human need, and proceeded to meet it. He loved people as individuals and as classes. He particularly loved his own class, the medical group, because they were his fellow workers in a great field. Every human being with whom he came in touch, was an object of kindly interest.

This kindly human interest, led to the broadening of his mind. It made him receptive to the views of others, enabled him to put himself in the others place, to see things from the other's viewpoint. By such measures he checked and verified, corrected or enlarged his own views.

Because he loved men, he was kindly tolerant in his relations with them, never quarreling over honest differences of opinion, often having bitter contentions but never embittered toward the contenders, never speaking in evil or angry terms of his opponents.

Because he loved men, he listened patiently and understandingly to their arguments and so gained their ears to hear his own.

Because he loved others, he sought nothing for himself and could speak for human good convincingly and win support.

Because of a great and unselfish heart, he dreamed dreams of medical victory and saw visions of health achievement and thus became the great prophet of medicine, the great leader of his profession, the great benefactor of his people. May the genius of his kindly spirit abide in us who honor his memory.

W. W. Anderson.

ORIGINAL ARTICLES

PREVENTIVE MEDICINE AND THE GENERAL PRACTITIONER*

By John M. Dodson, M. D.
Chicago

Six years ago, at the first banquet of the American Association of Industrial Physicians and Surgeons, held in Detroit, I commented on the fact that the industrial physicians, in devoting the major part of their time and attention to keeping employees well, were pointing the way to the general practitioner. I then ventured the prediction that, in the not distant future, the "family physician" would become, in large part, the "family health adviser," and would find his largest usefulness and derive a large part of his income in the field of preventive medicine.

The time seems opportune for more extended discussion of this prediction. Recently at the conferences on medical education, which are held each winter in Chicago, there have been numerous expressions of opinion that, notwithstanding the remarkable and gratifying advance in medical education in this country in the last quarter century, decided, if not radical, changes are necessary if our medical schools are to graduate students who are trained to render the best service that modern medicine makes possible.

Recent discussions in many medical societies, as well as papers and editorials in medical journals, voice a pronounced dissatisfaction with existing methods of medical practice. At a conference held in Washington last March, on the call of Surgeon-General Cumming, of the U. S. Public Health Service, to discuss the future of public health in this country, perhaps the most important and illuminating revelation was the deduction from several hundred questionnaires returned by medical students that public health (preventive medicine) is not "being sold" to the young men and women who are interested in medicine. The large majority of them reply that the matter has never been brought to their attention, and the idea of public health service as a career has never been considered by them.

To the family physician, and especially to the young men and women who are just entering on the practice of medicine, the possibility of impending changes in the methods of medical practice and medical education is of vital interest. There is a widespread feeling of unrest in the medical profession—a feeling much accentuated by the late war. Many physicians formerly engaged in general practice in small towns and rural communities, on being discharged from the medical service of the army and navy, were unwilling to return to the arduous work and meager returns of rural practice; and complaint comes from many such communities that they are without medical service of any kind. Some would find the solution of this problem in the graduation of more physicians, with a lowering of the requirements of premedical and medical education, in spite of the fact that we still have in the United States one physician for about every 700 of the population—a ratio nearly twice that of any other country in the world; despite, too, the further fact that there is no way of forcing the more poorly trained physicians into rural practice— a fortunate circumstance, because no other group of practitioners have such imperative need of that self-reliance and resourcefulness which comes in large part from adequate preparation.

The passing of the "family physician" is predicted and deplored. Some would seek to restore him by eliminating much or all of the medical curriculum along clinical lines to instruction in the specialties, restricting the

*Reprint from the Journal of the American Medical Association, January 6, 1923.

medicine, surgery and obstetrics. Others advocate a curriculum which would deliberately encourage preparation for exclusive devotion to a specialty, and provide service for the community by the plan of group practice.

There is much complaint of the disproportion between the fees commanded by the specialist and the modest fees of the general practitioner. This is the excuse sometimes offered for the vicious—indeed, criminal—practice of "fee-splitting"; that is, a commission paid the family physician by the specialist, usually a surgeon, without the knowledge of patient or family, for a case brought to him for operation. The family physician feels keenly the injustice to himself and the frequent harm to the patient which result from the growing custom of patients' guessing at the diagnosis of their own symptoms and resorting direct to the specialist of one sort or another, a plan which often results in unnecessary operation and leaves the patient no better, and frequently worse, than before. The widespread activity of pseudomedical cults, osteopathy, chiropractic, naprapathy, Eddyism and the like, is a constant source of aggravation to the honest, adequately trained physician, and the demand that there shall be one uniform standard of preparation for the practice of the healing art is logical and necessary for the public welfare. Parenthetically, it may be remarked that the necessary legislation to secure this end can come only through the education of the public, in whose interest and by whose elected representatives it must be enacted.

It is obvious, then, that important changes are coming in methods of medical education, and it is quite as certain, for reasons presently to be set forth, that in this evolution preventive medicine will come to play a much larger role than in the past.

Preventive medicine is that science and art which seeks to prevent the occurrence of disease in the individual and to limit its spread in the community. It comprises (1) personal hygiene and (2) community hygiene and sanitation. Personal hygiene is that body of knowledge and practice by which each individual protects himself from disease, which might come to him by invasion from without or by disturbance of normal physiologic processes within his own body.

Modern community hygiene or public health has perhaps been nowhere better defined than by Professor Winslow of Yale University: "Public health is the science and art of preventing disease, prolonging life and organized community efforts for the sanitation of environment, the control of community infections, the education of individuals in principles of personal hygiene, the organization of medical and nursing service for the early diagnosis and preventive treatment of disease, and the development of social machinery which will insure to every individual in the community a standard of living adequate for the maintenance of health."

The general practitioner is intimately concerned with both of these phases of preventive medicine. In the matter of personal hygiene—much the more important of the two —if people are to be educated as to what makes for health and efficiency, and trained in proper habits of living and working, it is the physician—the family physician—to whom the community must look, primarily, for advice and instruction. The public health officials of any community, whose duty it is to set up safeguards of pure water and food supply, and to give attention to sewage disposal, sanitary housing, the institution of quarantine when necessary, the registration of vital statistics, and all other measures by which the community as a whole seeks to protect its members against disease—these officials are practically helpless without the cordial, intelligent, constant co-operation and support of the physicians of the community.

Preventive medicine, therefore, must come to have a larger place in medical education and practice for several reasons:

1. In this field, the physician can render the largest service to his patients.
2. It affords a source of income of which the family physician is in need.
3. Unless physicians render that service in the prevention and control of disease which modern medical science has made possible, other agencies will undertake this task.
4. Public health work—community hygiene—cannot flourish without the constant support of the medical profession as a whole.

Let us consider the items of this argument more in detail.

Possibilities Of Service In Preventive Medicine.

The family physician can render the greatest service to his clientele by the preventing rather than by the curing of disease.

To one who is familiar with the stupendous progress in our knowledge of disease in the last sixty years, dating from the epoch-making discoveries of Pasteur, a progress which exceeds that of all the previous centuries, little argument is needed to make it clear that the practical benefits of this advance lie almost wholly in the field of preventive medicine. The hopes aroused by the discovery of the inoculation against hydrophobia, of antitoxin for diphtheria and of arsphenamin for syphilis that similar specific cures for other diseases would be found have not been real-

ized. If we add to those already mentioned the serums for cerebrospinal meningitis and for tetanus or lockjaw, the cure of hookworm disease by thymol or other agents, and perhaps the use of emetin in cholera and of the acids of chaulmoogra oil for leprosy, we shall have included about all of the contributions to our therapeutic resources that have stood the test of experience. Even among these the prophylactic use of toxin-antitoxin against diphtheria and of antitetanic serum against lockjaw are far more effective as life-saving measures than their use after the disease has actually appeared. The indiscriminate use of vaccines of all sorts, and especially of shotgun combinations such as the so-called phylacogens, proved a delusion from which the profession seems happily to be recovering.

There has been an apparent, but only an apparent, loss to therapeutics through the demonstration by modern pharmacology of the inertness and uselessness of many of the drugs on which so much reliance was placed by the empiric practice of earlier times. The claims of most of these pharmaceuticals have been completely exploded by modern scientific investigation. The wise physician no longer believes that he is really benefiting his patient when he simply doles out to him a few pills or powders or a bottle of liquid medicine, or writes a prescription for them. A few, a very few, drugs have stood the test of accurate pharmacologic study and play a useful role in the physician's armamentarium; but the larger part of the resources of modern medicine in the treatment of the sick lies outside of the pharmacopeia. The wise physician has learned to beware the claims of the proprietary medicine manufacturer and of his detail man. The argument that experiment on animals cannot be used in drawing conclusions as to the action of drugs on human beings is, in large part, fallacious, and the so-called clinical proof, the testimony of bedside experience, must be interpreted with extreme care. Careless, inadequate observation of this sort has misled the medical profession more than any other kind of evidence.

Let us now set off against these rather meager gains in the field of therapeutics the tremendous achievements of preventive medicine: Yellow fever, one of the most dreaded and fatal scourges of mankind, all but abolished from the civilized world, even in its endemic focus in Ecuador; typhus, or ship fever, the dreaded tabardillo of the tropics, robbed of its terrors and made entirely controllable by the discovery of its mode of transmission, through the louse. During the World War, after thousands had succumbed to this disease in the Balkans and in Russia, the epidemic was promptly and completely arrested by the delousing of soldiers and civilians by relatively simple means.

Typhoid fever, the paratyphoids and the dysenteries, up to twenty years ago the most prevalent and fatal of army diseases, have been conquered through our knowledge of the modes of transmission, by provision of pure water and food, the detection and segregation of typhoid carriers, and inoculation against these diseases. Malaria, also by reason of the discovery of its mode of transmission by the anopheles mosquito, has been brought under control, and vast areas of the most fertile and productive portion of the earth, hitherto all but uninhabitable by the Caucasian race, may now be occupied and cultivated by men of any race.

Cholera, once a frequent visitor to our own nation as well as to others, sweeping in vast pandemics from its endemic focus in India, has not visited the United States for a generation, and with constant watchfulness may be prevented from ever again becoming a scourge. The plague, likewise, has been all but exterminated, and may be completely abolished from the civilized world by the diligent application of our present knowledge.

These marvelous possibilities of modern sanitation and hygiene are not matters of mere theorizing but have been demonstrated on an enormous scale both in civil life and in wartime. One need but call to mind the wonderful accomplishments of the late General Gorgas and his staff in converting the Panama Canal Zone, once the most deadly pest-hole on the globe, into a region which presents an annual morbidity and mortality rate which compares favorably with that of the healthiest cities anywhere.

Contrast the awful experience of our own armies during the Spanish-American War and of the British in the Boer War—less than a quarter of a century ago—with that of the Japanese in the Russian War, and of all nations in that most terrific of all wars, the World War.

Through the civilized world, the experience of nations, states, cities and rural communities is equally gratifying as shown by statistics of illness and death. More than twelve years have been added to the average human life. The diseases of infancy and early childhood have been conquered to such a degree that in every well-conducted city the deaths in this early period of life are less than half what they were twenty or twenty-five years ago, in proportion to the population.

Of the achievements of modern surgery, it is unnecessary to speak to intelligent physicians or laymen—all made possible by the discovery of the microbic causes of wound infection and by aseptic technic, which is

almost exclusively a preventive measure.

Progress has of necessity been slower in the growth of our knowledge of diseases of internal origin resulting from disturbed metabolism, excessive strain, mental and physical, defective heredity and bad habits of eating, living and working. Nevertheless, we already have accumulated knowledge which, if it could be transmitted to every individual so clearly and impressively as to induce him to cultivate and adhere strictly to correct habits of living, would result in an enormous reduction of human illness and an increase of human efficiency. Thru this great stock of knowledge, medical investigators are daily adding new increments.

With knowledge of all these facts, can one doubt for a moment that in medicine, more than in any other field, an ounce of prevention is worth many pounds of cure? Can one escape from the conviction that far and away the largest possibilities of service by the physician lie in the domain of prevention?

A SOURCE OF INCOME

One hesitates to use a commercial expression for fear that it may lead the reader away from the great truth that medicine is a profession of service, and the moment one abandons that point of view and substitutes money-getting as his chief goal, he sacrifices the great glory and satisfaction of a medical career. If, however, one were to use a frequent expression of the business world, one might say that preventive medicine is the "best goods" which the physician has to sell, and he is a poor merchant indeed who devotes his time to the display and sale of his poorer, less valuable goods, to the neglect of those which his customers—his patients—must soon discover are altogether the best goods for them to buy. And his patients are willing to pay for such goods, and the physician, to use another commercial phrase, "needs the money."

There is no doubt that the average income of the general practitioner, especially in the smaller cities and rural communities, has relatively declined in the last quarter century, and especially in the last decade. This decline is due to a number of conditions, some of which it is not easy to analyze. The very accomplishments of preventive medicine to which reference has been made have materially lessened the frequency and duration of many diseases. Typhoid fever, the infantile diarrheas, diphtheria and malaria were formerly sources of very considerable annual revenue to the average practitioner, yet he cannot but rejoice in the fact that these diseases have been so greatly lessened; and to the glory of the right-minded physician be it said that he has done all that he could do to bring about this result. The rapid development of hospitals and hospital practice, and the automobile and good roads have materially enhanced the capacity for service of the individual physician. He can give better and more efficient care today to two or three patients than he could give to one in earlier days, with the same expenditure of time and energy. While this factor has increased the income of some physicians, it has certainly diminished the average income.

The growth of specialism has doubtless affected the income of the family physician in some localities, but not to the extent that is often imagined. Specialism, of the right sort, does not take from the general practitioner work which he formerly did, but renders a service which was not possible before, and, properly used and controlled, greatly increases the service that medicine can render the sick.

The family physician of today is quite as competent as were those of previous generations to perform the minor surgical procedures, such as to remove foreign bodies from the conjunctiva or wax from the ear, to lance felons or boils, to reduce strangulated hernia or dislocations of joints, to dress the usual fractures, and to meet other surgical emergencies.

I doubt, too, that the medical cults, widespread as they are, materially encroach on the legitimate revenue of the really capable physician. Sooner or later, most of the foolish people who resort to these fads are compelled to seek the aid of scientific medicine, and they are very likely to need more attention and for a longer period than if they had not trifled with quackery of various sorts. The exploitation of the public by these cults is exasperating to the physician, but the real harm they do is not to him but to the public.

In the practice of preventive medicine, the practitioner has a legitimate source of income for service which he has heretofore, for the most part, given away in offhand suggestion and advice.

Preventive Work Of Other Agencies

If the medical profession, and especially its largest, most important contingent, the family physician, does not assume leadership in this movement to prevent disease, other agencies will undertake the task. Indeed, they are already doing this very thing. The social service worker, the public health nurse, the great benevolent foundations, have entered the field and are meeting the demand of the public for the institution of measures by which they may secure the benefits of modern sanitary science. Medical men are prone to underestimate the degree to which the public

is already informed as to the developments of modern medicine and its possibilities in the prevention of disease. Perhaps the best evidence of this is the large amount of space devoted to health topics in the current literature of our time. Many of the leading newspapers print a health column every day edited by more or less—frequently, less—competent physicians. The periodical magazines circulating in the aggregate millions of copies seldom print an issue without one or more articles dealing with some achievement of medical science.

Now the significance of this fact is that the publishers of these newspapers and magazines are meeting a universal demand. They are not inspired by altruistic motives, and are not seeking to force on their readers information that they think they need but do not seek. They are printing material that will sell their product. Can one assume for a moment that a public so informed will fail to demand the institution of those measures of personal and community hygiene that will bring to them the beneficient fruits of modern medicine? No, the medical profession must make its choice. It may fight the irresistible movement of the people to secure these benefits, by community hospitals, health insurance, provision for the protection of maternity, the correction of remediable defects in schoolchildren, or the many other forms this movement may take; in which case, the profession will certainly be brushed aside or crushed as by a steam roller. Or the medical profession may recognize this trend and assume that leadership which it is its right and duty to assume. As leaders, it can direct these movements in such a way as to secure the largest possible benefits to the people as a whole and to conserve its own rights and emoluments. In any movement seeking the conservation of the health of the community, the highly trained, scientific medical man is the one indispensable factor. Any movement which seeks to secure his service at a wage which is not commensurate with the highly specialized training, skill and ability which the long, arduous and expensive modern medical education has secured for him, or which attempts to secure this service under conditions, by contract, or otherwise, that are obnoxious to any highly trained expert, must fail to secure the results that are sought. In the long run, that method of administering medical science, either preventive or curative, which best insures an adequate compensation and acceptable conditions of work to the physician is certain to insure the best returns to the community.

Importance Of Intelligent Cooperation

The fourth argument—that public health cannot flourish without the intelligent, cordial co-operation of every physician in the community—is so obviously true that it needs no elaboration. Moreover, when medical students are fully informed as to the great advantages and the enormous possibilities of preventive medicine, there will be no dearth of men seeking service in the field of public health, because this phase of hygiene and sanitation is certain to make a strong and effective appeal to a large group, provided the conditions of public health work—reasonable wage, security of tenure of office and freedom from cheap and corrupt political interference—are insured.

How is the family physician to practice preventive medicine, to combine this with the present type of practice and to secure for such work a fair monetary compensation? This query can best be answered by pointing out what is already being done; for much more has been accomplished in this direction than is realized except by those who have surveyed the situation with some care.

The dentists were first in the field, and for some years it has been the custom of the good practitioners of dentistry to insist that the children especially, of their clientele, should be brought to them at regular intervals, three or four months, usually, in order that they may be trained in the proper care of the teeth, and the earliest signs of decay detected and arrested.

The infant welfare movement, inaugurated first among the poor by Budin of Paris in the so-called nourissons, has been the means of saving thousands of infant lives and of insuring sounder, stronger adults. This infant welfare movement has extended rapidly throughout the civilized world, at first as a charitable work; but within the last three or four years it has been translated into private practice. Many of the men engaged in pediatric work now secure a very considerable portion of their incomes from fees paid by mothers for advice in the care of their healthy, normal infants. The frequency with which such visits to the physician are made, at which the weighing and measuring of the child constitutes an impressive demonstration, varies, of course, with the zeal of the mother, the condition of the child and the judgment of the physician.

Similarly, it is rapidly becoming the custom in private practice for the prospective mother to seek examination and advice from the earliest stages of pregnancy, at intervals of from two to four weeks. In communities where this custom has for some time prevailed, as in New Zealand, the fatal accidents of

labor, both to mother and infant, have been cut in half.

Reference was made in the beginning of this paper to the industrial physicians and surgeons. They, too, are pioneers in this field of prevention; for, in the best organized industrial establishments, the efforts of the medical department are almost exclusively devoted to keeping the employees well. Some of the great insurance companies have awakened to the life-saving possibilities of preventive medicine, and now offer their policyholders thorough examination at stated intervals for a small fee, or gratuitously. This, too, is not a philanthropic proposition, but one designed to reduce the number of death claims and conserve the funds of the policyholders.

A great national institution, the Life Extension Institute, organized by laymen, provides for its members a periodic physical examination, with medical advice to those found in need of it. This institute has made one serious mistake in setting a fee for its medical examiners that is utterly inadequate. There is a mistaken notion in the minds of most laymen and of many physicians that the physical examination of a healthy person demands less time and skill than that of one who is sick. The fact is quite to the contrary. A frank expression of disease, such as pneumonia, decompensation in cardiovascular affections, an acute infection—indeed, of almost any illness—should be recognized by the veriest tyro in medicine, although a thorough, complete examination must always be made to insure the absence or detect the presence of obscure complication. To assure an apparently healthy individual that he is sound in all respects and free from any tendency to disease able to withstand the stress and strain of the business in which he is engaged and all of the activities which make up his daily routine, requires an exhaustive, thorough examination that demands a high degree of skill and much time.

Many man, especially of large affairs, give evidence of their interest in this matter by subscribing to bureaus of urinalysis, paying a fee of from $10 to $25 a year for a quarterly report on the analysis of a specimen of urine sent to the laboratory. This is a practice that should be discouraged, because the examination of the urine alone is of little value. Many serious disease which come on insidiously give no evidence of their presence in the urine. The person who is securing such reports at intervals from a clinical laboratory is lulled into a sense of security as to his health, and is extremely likely not to resort to his physician for a thorough, complete physical examination. Such an examination once a year is a far greater safeguard than an examination of urine every week.

A few wiser men, especially in the cities, make it a practice to seek such a thorough, comprehensive physical examination every few months or weeks.

To bring about the more general practice of preventive medicine, it is only necessary to extend the custom, now followed by a few, to all the people in any community. The action taken by the House of Delegates of the American Medical Association at the St. Louis session is evidence of the fact that the medical profession is aware that such examinations are important, and that they should be encouraged and facilitated. The resolution, passed by the House, as presented by the Council on Health and Public Instruction, reads:

WHEREAS, The need and value of periodic medical examination of persons supposedly in health are increasingly appreciated by the public, it is recommended by the Council on Health and Public Instruction that the House of Delegates authorize the Council to prepare suitable forms for such examinations and to publish them in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION; and that the county medical societies be encouraged to make public declaration that their members are prepared and ready to conduct such examinations, it being understood that the indigent only shall be examined free of charge and that all others are expected to pay for such examinations.

To render adequate and satisfactory service to his patients in the matter of prevention of ill health, the family physician should visit their homes at such intervals as will enable him to know the conditions of their living and working, and to advise when changes in such conditions are essential for the welfare of the family or any of its members. He should know intimately the schools that the children are attending and should advise with their teachers, when necessary, as to their school life in relation to their physical well-being.

Is the medical profession, as now constituted, prepared to meet this demand, which, to some degree, it must create? Is the average family physician so educated as to the facts and possibilities of preventive medicine that he can render as effective service in this line as he is supposed to render in curative medicine? It must be acknowledged that he is not.

The Remedy

And the remedy: First, study must be undertaken by the general practitioners, preferably, in part at least, through special continuation courses, provided for this purpose at medical centers; and the publication of a

journal which shall present the newer truths of hygiene and sanitation in attractive, readable form, both to the profession and to the laity. Happily, the House of Delegates of the American Medical Association was alive also to this need, not satisfactorily met by any of the existing journals, and therefore instructed the Board of Trustees to arrange for the publication of such a journal of hygiene.

Secondly, for the physicians of the future, the present and coming generation of medical students, a revision of our present curriculum must be made in such manner as to stress the importance and need of prevention as distinguished from cure. This does not mean anything like so radical a revision as might at first appear. The remedy does not lie in the injection of new courses in formal sanitation, hygiene, bacteriology and the like, into an already overstuffed curriculum, or the replacement of existing courses by such as these; at least, to any marked extent. It lies rather in a change of attitude of every instructor in every course given in the clinical branches. The possibility of the prevention of disease and the wound infections should be a dominant thought in the mind of every clinician at every lecture or demonstration. For example, every time a case of typhoid fever is presented, the clinician should propound to the class these queries: "When, how and why did this patient become ill with this disease? Who was at fault? How could it have been avoided? How can the extension of this disease to others in the community be prevented? What are the specific duties of the attending physician in such a case in relation to the patient, the nurses, himself, the family and the community health officer? Just exactly what steps, what precautions should he take in discharging his full duty to each of these?"

Similarly, in discussing a case of wound infection as of a hand, he should inquire how much infection could have been forestalled: Who was at fault in not instituting the proper measures at once when the wound was sustained, the ignorance or the neglect of the patient himself? or, if he was ignorant, Why have those in control of the establishment in which he is employed allowed him to remain uninformed as to what he should do when injured?

The education of medical students as to what constitutes preventive medicine in the several diseases and accidents of life can be much more effectively accomplished when these are discussed in relation to all other aspects of such disease or injury—its etiology, pathology, diagnosis, prognosis and treatment—than in courses which treat only of the preventive measures detached from other aspects of the subject. Preventive medicine is the "safety first" movement in the combat against illness, wound infection and death. Needless to say, there is a considerable body of information concerning bacteriology, hygiene and sanitation which is best taught as it is now, in a department devoted to those branches.

Thirdly, it must be emphasized at all times and in all places that the medical profession is above all a profession of service to mankind. While, in the interest of the physician, of his family, his fellow physicians and his patients, it is his right and duty to exact a monetary return for his labors that is commensurate with the long, expensive period of preparation which has been required of him and the high degree of skill thus acquired, he makes the most grievous and fatal mistake if he yields to the spirit of commercialism which is abroad, seemingly in more intensive degree than ever before, and makes "money-getting" his dominant thought.

Imbued with that fine spirit of service, the wise physician of today cannot but realize his largest avenue of usefulness lies in the field of the prevention of disease.

ABSCESS OF THE LUNG OCCURRING AFTER TONSILLECTOMY WITH CASE REPORT*

By James Royden Peabody, Louisville

In Osler's Text Book on the Practice of Medicine published in 1901, the statement is made that "after operations on the nose and throat infective particles reach the bronchial tubes by aspiration and excite an intense inflammation which often ends in abscess of the lung"; but so far as the writer is able to determine the first nose and throat specialist in this country to call attenion to this serious complication of tonsillectomy was Dr. Charles W. Richardson, of Washington, D. C., who in March, 1912, read a paper before the Medical Society of the District of Columbia on Tonsillectomy with Consideration of its Complications"; in which he reported several cases of abscess of the lung.

Looking over the literature on the subject I was unable to find mention of this condition in any text book on rhinology and laryngology, and until very recently only few men in our specialty had written any articles about it. Not until 1916 was much attention given by specialists to abscess of the lung complicating nose and throat operations although several papers had been written by internists and general surgeons prior to this; the most interesting one by Dr. Morris Manges entitled "The Occurence of Abscess after

*Read beforeg the Louisville Medico-Chirurgical Society.

Tonsillectomy with report of nine cases in Adults." This article was published in the American Journal of Surgery in March, 1916, and Dr. Manges began his paper with the following statement: "During the past six months six patients have been admitted to Mt. Sinai Hospital for the treatment of pulmonary abscess which have followed tonsillectomy. Such a large series of cases in which a short period deserves some notice in these days when every tonsil is under suspicion of being a possible focus of infection in so many cases of obscure origin." This general surgeon states that "abscesses of the lung should never occur if the patient has been properly treated," and also "that these post-tonsillectomy pulmonary abscesses do not occur in private practice on account of the radical difference in the way private and public patients are treated." I wish to take exception to these two statements and I believe Drs. Richardson, Coakley, Fischer, Cohen and several other prominent men who have been interested in this subject will agree with me.

It is my belief that this complication can be prevented in many cases by careful technic, but any operator may have this accident happen to one of his patients notwithstanding the fact that the best of care and attention has been given at the time of operation in the after treatment.

In the Journal of the A. M. A., April 29, 1922, Dr. William F. Moore, of Philadelphia, had an article on "Pulmonary Abscess with an Analysis of 202 cases Following Operative Work about the Upper Respiratory Passages." He stated that pulmonary abscess occurred once in from 2500 to 3000 tonsillectomies. Again in the Journal of the A. M. A., August 12, 1922, Dr. C. N. Chipman, of Washington, D. C., had an interesting article on the "Relation of the Anaesthetic to Pulmonary Abscess following Nose and Throat Surgery." This writer had interviewed eleven surgeons who had treated twenty-four lung abscesses; 20 followed tonsillectomy, two followed submucus resection of the septum and two after frontal sinus operations.

Dr. Chipman lays great stress on the failure to cleanse the mouth and teeth before tonsillectomy, and also the failure to use suction at the time of operation, as important measures to prevent this complication. In the discussion of his paper Dr. Logan Clendenning, of Kansas City, made the remarkable statement that he sees on an average of one pulmonary abscess a week following nose and throat operations, but I feel that he was not correctly quoted. Dr. Clendenning has an article on Abscess of the Lung in the Laryngoscope of February, 1922, and he says that the motor driven apparatus for anaesthesia is the most important cause of this condition.

The etiology of lung abscess following nose and throat operations has been much discussed recently in our journals and several contributory factors are given:—1ts. The anaesthesia. 2nd. Failure to properly prepare the patient before the operation and faulty after-treatment. 3rd. Aspiration of infected blood and pieces of tonsillar tissue. 4th. Embolism or infarction. 5th. Some specific infective agent. 6th. Some antecedent cause either local or general.

1st. The Anaesthesia:—It is generally conceded that the anaesthetic itself does not cause lung abscess although we all know that pulmonary complications occur more frequently after ether anaesthesia which no doubt is in part due to the fact that more tonsillectomies are done under a general anaesthetic. In the 202 abscess cases collected by Dr. Moore, 151 were operated under ether, 39 under a local anaesthetic and 8 under gas.

A great deal of stress is laid by some observers on the method of ether administration especially Dr. Clendenning who believes that lung abscesses began to appear immediately after use of the motor driven ether apparatus became general. This writer also makes the statement that the first American cases were reported by Dr. Manges, in 1916, but he is mistaken as Dr. Richardson reported his cases in 1912 several years before ether vapor was used under pressure.

It is interesting to note the difference of opinion among our best men in regard to the depth of anaesthesia to be used in tonsillecomy. Dr. Coakley advocates carrying the anaesthesia to the full abolishment of the pharyngeal reflex. Drs. Moore and Chipman emphasize the importance of light anaesthesia and quote Dr. Jackson in stating that "The bechic reflex is the watch dog of the lungs; don't drug it unnecessarily."

During the last few years, and especially since the recent war, the method of doing tonsillectomy under local anaesthesia has become very popular, but I have been reliably informed that in certain localities especially in St. Louis there have occurred so many serious complications following its use that it is being discarded. Attention is again called to Dr. Moore's 202 collected cases with 39 operated under local anaesthesia.

3rd. Aspiration of Infected Blood and Pieces of Tonsillar Tissue. In my opinion, based upon reading the literature and because it seems the most logical cause, it is the aspiration of infected material which is largely responsible for lung abscesses, following tonsillectomy.

Dr. Richardson, in his paper written in 1916, stated that "the causation of pulmon-

ary abscess secondary to tonsillectomy is in all probability through embolism," but later in the Journal of the A.M.A. Oct. 22, 1922, he had thrown this opinion aside and now believes that very few of these cases are of embolic origin, but "if not entirely, they are in a large part due to inspiration of septic material which is squeezed out of the tonsil at the time of operation." He adds that "this condition is as likely to occur under local manipulation whether a general or a local anaesthetic has been given."

Recently a Canadian Hospital reported four lung abscesses occurring in rapid succession following the use of new mouth gag which held the tongue firmly at the base. This not only allows free access of air to the larynx but makes it possible for blood and infected material to be aspirated into the lungs.

There is a case report in one of the recent journals of a tonsillectomy performed under a general anaesthetic on a patient wearing a tracheotomy tube. When the head of the table was not lowered, blood came out of the tube; showing that it passed below the larynx.

It does not often happen that patients swallow pieces of tonsillar tissue, because when tonsillectomy is skillfully performed the tonsil is removed en masse, and yet Dr. Yankaur bronchoscoped a number of patients with lung abscess expecting to find some tonsillar tissue.

Statistics show that in a very large percentage of cases the abscess is in the right lower lobe near the hilum and that the average time of development is nine days, both of which point to the aspiration of infected material.

4th. Embolism or Infarction.

Fischer and Cohen, of Philadelphia, in 1912, collected 76 cases of lung abscess after tonsillectomy and stated that "the most potent cause of this complication is the introduction either through the lymph or vascular circulation of infected emboli which find lodgment in the lung structure."

Supporting the embolic and infarction theory is the fact that many cases of lung abscess have been reported following operations under local anaesthetics. It is difficult to understand how a patient could aspirate infected material when the tonsils are removed under local anaesthesia, but Dr. Jackson says that the larynx can be completely anaesthetized by the application of 8 per cent cocaine to the lower pharynx provided that one goes deep enough to reach the superior laryngeal nerve. If this be true we can easily understand how the cough reflex can be abolished and this safeguard to the lung removed. In favor of the embolic theory is the fact that while injecting the tissues around the tonsil with a local anaesthetic, the needle is sometimes pushed through the infected tonsil and possibly into a blood vessel.

Dr. Hanau W. Loeb has in the Annals of Otology, Rhinology and Laryngology of June, 1922, a remarkable collection of "Fatalities Following Operations on the Nose and Throat not Dependent upon Anaesthesia." Out of 332 fatal cases there were 14 of pulmonary embolus and abscess all but two of which followed tonsillectomy under a general anaesthetic. Dr. Loeb refers to the study of "Post Operative Pulmonary Complications" made by Dr. Elliot C. Cutler and Alice M. Hunt, R. N., of Boston. This work was published in the Archives of Internal Medicine in 1922 Vol. XXIX and it offers convincing proof that embolism and infarction are responsible for the majority of cases of post-operative pulmonary complications. The causes of infarction are given as: 1st. Trauma. 2nd. The mobility of the part. 3rd. Sepsis, and the statement is made in conclusion that "anaesthetists and anaesthesia should not bear the blame for these complications."

5th. Some Specific Infective Agent.

This cause was suggested by Dr. Manges because three patients were admitted to Mt. Sinai Hospital with lung abscesses; all of the patients had their tonsils removed in the same institution within a period of five days and the operations were performed by different men and all were skillful operators. Dr. Manges thought that this was more than a coincidence and suspected faulty, operating room technique. That this is ever an etiological factor would be difficult to prove.

5th. Some Antecedent Causes Local or General.

Nearly all throat surgeons prefer not to do a tonsillectomy too soon after acute tonsillitis or quinsy, but the reason is more on account of the danger of hemorrhage. It is certain that the presence of acute inflammation or pus would greatly increase the possibility of a lung abscess.

As to some general condition of the patient being an antecedent cause: A lowered resistance from any source, such as chronic bronchitis or a tubercular lesion, would add an element of danger. Dr. Moore in his 202 collected cases states that where a tubercular lesion had previously been diagnosed the symptoms developed earlier; six and a half instead of nine and a half days.

The symptoms of a lung abscess are very characteristic and predominate over the signs in the chest. This condition should never be overlooked although I feel that the diagnosis is not made in many cases. As early as a few hours, or as late as two or three weeks, the patient may develop sudden pain in his chest

and have a violent attack of coughing; this is soon followed by high temperature and a copious expectoration which in nearly all cases has a very foul odor and often streaked with blood. The offensive odor and taste of the sputum is most suggestive of lung abscess and is very noticeable to the patient.

It is not the purpose of this paper to discuss fully the diagnosis and treatment, but to mention the fact that there is usually a localized area of fine rales, dullness, impaired breathing and usually a friction rub over the small portion of the lung involved. Also the X-ray has helped considerably in the diagnosis. A good plate will often show the abscessed area near the base or the mid-line of the lung when the physical signs are very indefinite or absent.

Another means of making the diagnosis is through exploratory puncture, but I wish to emphasize the fact that you will often fail to find pus because the abscess is usually very small and deep and may be empty at the time of puncture; also the pus is very thick and not large in amount as in empyema.

The treatment of these cases is nearly always in the hands of the general surgeon although recently attempts have been made to treat lung abscess by endo-bronchial irrigation with some success.

In 1919 Dr. Tewsbury reported 19 cases of lung abscess following nose and throat operations; all treated by artificial pneumothorax with 16 cures and 4 deaths. Certainly these results are most encouraging as the mortality has been high from surgical operations and convalescence very prolonged at best from non-operative treatment.

Summary and Conclusions.

Abscess of the lung complicates tonsillectomy under local and general anaesthesia often enough to attrack considerable notice, and it may be caused by aspiration or infection of the lung through the anaesthesia. In order to prevent this distressing complications.

1st. Do not operate in the presence of acute tonsillitis or quinsy and not too soon after the inflammation has subsided.

2nd. Prepare the patient carefully for the operation.

3rd. Observe the same rules of aseptic technic as in any other surgical operation.

4th. Do not carry the anaesthesia too deeply.

5th. When operating under a general anaesthetic, have the patient's head lower than his feet.

6th. Either use suction or remove the blood and mucus from the pharynx or remove it with a sponse.

7th. When operating under a local anaesthetic, do not pass the needle, used for injecting, through the tonsil.

8th. Avoid undue trauma of the tissues around the tonsil.

9th. Keep the patient in the hospital at least 24 hours after the operation.

Case Report: S. C., colored, aged 29, admitted to the Louisville City Hospital on April 26, 1921. Family history negative.

Previous history. Frequent sore throat and has had many attacks of rheumatism since a child. Often in bed from four to six weeks at a time. Not in bed from rheumatism since his discharge from the army in 1919.

Present history. For four months has had sore throat almost constantly, the pain would radiate to his ears on swallowing. Local applications failed to relieve and he was advised by his family doctor to consult a specialist. Physical examination was negative except for large inflamed tonsils. I had the patient under treatment for several weeks and was suspicious of the chronic tonsillitis being specific. A blood Wassermann, was negative. He was advised to have his tonsils removed under a general anaesthetic as his throat was very sensitive and he gagged very easily. I also felt that the operation would be more difficult than usual.

On April 27, 1921, the tonsils were removed by dissection and snare without incident except for the fact that a large quantity of ether was necessary to secure proper anaesthesia. The drop method was used throughout and no suction. The head of the table was not lowered because the patient was operated on a stretcher. There was profuse hemorrhage from the right side which was entirely controlled before the patient was put to bed and there was no more bleeding.

Twenty four hours after the operation the patient sat in a chair and was dismissed on the third day when his temperature was 100 pulse 84, respiration 20. He felt well except a sore throat. It was necessary for him to ride several miles on a street car before reaching his home in the country and he says that he was "chilled." He felt tired and weak and went to bed. At four o'clock in the morning on the fourth day after the operation he had severe pain in the lower right chest and a violent paroxysm of coughing. The family doctor was called and thought the patient had pleurisy or pneumonia. The temperature was high and the pulse very rapid. The patient felt very sick and in a few days began to expectorate profusely and noticed a very offensive smell and taste to the sputum. His condition grew steadily worse and I requested that he be returned to the hospital.

He was again admitted to the city hospital on May 13th, which was 17 days after his operation with the provisional diagnosis of abscess of the lung following tonsillectomy.

This diagnosis was confirmed by Dr. Moore by the history, symptoms, physical signs, blood count, X-ray although by exploratory puncture the abscess cavity was never located.

Three days after admission the patient's condition became worse, his expectoration almost ceased, his respirations very rapid and fever higher. The leucocytes were 31,000 with 90 per cent polynuclears, and pneumonia was expected. Four days later his condition began to improve and this improvement continued until his discharge two months later (July 13th).

I saw this patient a few days ago and he stated that his cough and expectoration persisted until about one month ago when he felt for the first time hat he was getting better. He has been unable to work on account of weakness and shortness of breath.

Examinations were made repeatedly of the sputum while at the hospital and since his return to his home but no tubercle bacillus have been found. At the present time Dr. Moore tells me there are very few physical signs in his chest but the X-ray shows considerable fibrois.

DISCUSSION:

I. A. Lederman: We can all appreciate the thoroughness with which Dr. Peabody has investigated the subject of pulmonary abscess following tonsillectomy. So far as I know he has not overlooked any of the literature published during the last few years.

When Clendenning's paper was published a year or two ago it created quite a stir among rhinologists and laryngologists, and his statements met the thorough disapproval of the best men in this country. He stated that the greatest instrument in the production of pulmonary abscess after tonsillectomy was the motor driven ether apparatus now almost universally used. Personally I do not see how this instrument can produce a sufficient amount of force to drive material into the lung. It is also difficult to conceive that lung abscess could follow tonsillectomy under local anesthesia from aspiration of infectious material. We can understand how this might be possible under general anesthesia; but I do not believe there is sufficient anesthesia of the larynx, as suggested by Jackson, to abolish the reflexes and allow infectious material to enter the lung. There is little hemorrhage during tonsillectomy and immediately afterward the patient is turned on his side, and personally I do not see how aspiration can happen.

While I have never seen pulmonary abscess or infection follow tonsillectomy under local anesthesia, I agree with Dr. Peabody that to render its liability less under no circumstances should the tonsil be pierced with the needle. It is unthetic (novocaine solution preferred) can be injected into the pillars behind the tonsil through the supra-tonsillar fossa and satisfactory anesthesia obtained.

Whether there is any truth in the theory that an embolus enters the lung by the blood route or the lymph route I do not know. There seems no proof of this except the information in Loeb's article which reviews the studies of Cutler and Miss Hunt, of Boston.

I have seen one pulmonary abscess following tonsillectomy which occurred before the advent of the motor driven ether apparatus or the suction instrument. Symptoms developed the third or fourth day after operation. The patient was a man of thirty who was kept under the influence of the anesthetic with difficulty and had much retching during the operation. He recovered but was a semi-invalid for two years. He is perfectly well today.

After all the most important feature is how to avoid this complication which of course is always a dangerous one. I would like to emphasize one or two points Dr. Peabody has mentioned. I fear some of our colleagues do not fully recognize the importance of local preparation of the patient. I am a firm believer in a clean mouth preliminary to any operative work about the mouth or throat; this includes eradication of any infection that can be eradicated and cleansing the teeth and tonsils as thoroughly as possible. Infected tonsils cannot be absolutely cleansed, all the infective material cannot be removed from the crypts, but the infection may be reduced by proper cleansing. I believe it is important to refrain from operating in the presence of acute or subacute infection. Dr. Peabody mentioned tonsillitis and quinsy. In contra-distinction to this, however, articles have appeared purperiting to prove that tonsils may be safely removed during the acute stage of quinsy. Some physician in Kansas published an article a few years ago stating he had experienced no trouble after tonsillectomy in the presence of quinsy or acute follicular tonsillitis. This does not agree with the views of the majority of observers.

I believe Jackson is right about anesthesia: The patient should be kept sufficiently anesthetized to permit the operation to be safely performed, and yet leave his swallowing reflex unabolished. These are always difficult anesthesias and rarely can the anesthetist keep the patient in just the stage desired, and we must do the best we can. It is my custom to use the motor driven ether apparatus with suction and see no reason for discontinuing the method. It is of considerable assistance in maintaining the degree of anesthesia we prefer during the actual operative steps. The suction apparatus is exceedingly important and far superior to the use of sponges. This method keeps the throat clear of blood during the entire operative procedure.

The position of the patient on the operating table is important: He should be in the horizontal posture with head lower than the shoulders. One point Dr. Peabody did not mention is the position of the patient after being placed in bed. The moment the operation is completed, especially if the patient is a child, he is turned on his abdomen, is placed in bed in that position, and remains so until he has entirely recovered from the effect of the anesthetic and all his reflexes have returned. In adenoidectomy it has always been my custom to lower the head and to place the child on his abdomen until the secretions are eliminated. These are some of the important points and if carefully observed I believe there will be fewer lung abscesses in the future than we have seen in the past.

Until a few years ago we did not hear much about pulmonary abscesses following tonsillectomy. I remember to have read the article by Manges when it appeared, but had forgotten about it until quite recently. Unquestionably lung abscesses have occurred following tonsillecomy which have not been reported. We must remember that tonsillectomies have increased enormously within the last few years and many more men are doing this work now than formerly. According to the reported cases this complication has occurred in the hands of competent men, those who have been properly trained, specialists whose ability is unquestioned.

In my opinion the motor driven ether apparatus has nothing to do with the production of pulmonary abscess, and it is not proven that infective material is carried through the blood or the lymph stream. I believe that the majority of lung abscesses following tonsillectomy are due to the aspiration of infectious material. Dr. Peabody spoke of the infrequency with which particles of tonsil tissue have been found in the lung. We know that small pieces of adenoid tissue have fequently been found in the respiratory tact after operation; but, of course, adenoidectomy is an entirely different proposition. It is sometimes impossible to remove adenoids without small masses being detached and these may find their way into the lung.

With the precautions Dr. Peabody has outlined I believe the incidence of pulmonary abscess following tonsillectomy will be reduced to the minimum.

John Walker Moore: I saw the patient mentioned by Dr. Peabody seventeen days after tonsillectomy had been performed. When re-admitted to the city hospital at that time he was expetorating an enormous quantity of foul material as described by Dr. Peabody. He had fever and there was consolidation of the lower two-thirds of the right lobe of the lung.

With the history that the man had been operated on, had been ill for fourteen days, and had been expectorating purulemt material, I made the diagnosis of pulmonary abscess. No puncture was made for two days, as I thought if the pleura was not already involved it might be infected by puncture; but the third day expectoration ceased, typical bronchial breathing was evident throughout the consolidated area, and pleuritic rubs were also heard. Several attempts to puncture the abscess cavity were futile. A number of roentgen-ray examinations were made which only showed lung consolidation.

After three weeks, the patient in the meantime having a zigzag temperature curve, it was thought there might be some empyena, and the roentgen-ray report suggested pus in the pleural cavity. Another puncture failed to locate any pus. During all this time the patient had a hacking cough and high temperature. He remained in the hospital for about three months. The pneumonic process finally subsided, yet he had some impaired resonance and hacking cough on expiration.

This man returned to the hospital about a week ago and at the request of Dr. Peabody careful examination was again made. There was no rigidity of the thoracic muscles, no apparent loss of weight, and the patient seemed in excellent physical condition. He complained only of the hacking cough and shortness of breath on exertion. Percussion and other methods of physical examination elicited no definite evidence of pathology in the lung, and I was much surprised on examining the latest roentgenogram made to find just lateral to the hilus about the middle of the lower right lobe what was apparently an enormous amount of scar tissue with good lung tissue between that and the surface. This was probably the old abscess cavity well "walled off."

In this connection: Three months ago a white woman of forty was brought to the city hospital with what was thought to be a pulmonary abscess following panhysterectomy performed eight months previously. She gave the history of chronic pelvic disease and it was because of this that radical operation was performed. One week later she began expectorating a foul smelling purulent material and continued to do so until admitted to the hospital eight months later. She was cachectic in appearance, had a septic temperature, rapid pulse, and was expectorating an enormous amount of purulent material. This was especially marked in the morning after the nurse had given her a bath. In this case also there was consolidation of the lower two-thirds of the right lobe of the lung. I asked a specialist to see her hoping he might introduce a bronchial aspirator and remove the pus. We were unable to localize definitely a pus cavity although we know positively one was present. The lung seemed to be consolidated entirely around the abscess cavity. A month later the woman developed meningitis and died. Unfortunately necropsy was not permitted.

Hugh N. Leavell: My experience with nose and throat work began twenty-seven years ago when I became associated with Dr. S. G. Dabney in the Hospital College of Medicine. It was the custom then to perform tonsillomy instead of tonsillectomy. During the following ten years I administered more than eight hundred anesthesias, trying to far as possible to maintain the degree known as the "adenoid stage" of anesthesia, i. e., just short of complete anesthesia and without abolition of the swallowing reflex. During those ten years I do not recall seeing or hearing of a pulmonary abscess following tonsillotomy. The anesthetic used in those days was chloroform; we used nothing else until during the last year or two of the association mentioned when we used chloroform-ether.

I have had one case of pulmonary abscess following tonsillectomy: In March, 1916, I removed the tonsils of a woman aged twenty-six who had previously had acute tonsillitis persisting the usual time (about seven days). Two weeks later she was taken to the hospital for tonsillectomy. She was not in very good physical condition at the time, her tonsils had not completely returned to their normal size, and she presented the appearance of being somewhat septic, due it was presumed to the attack of tonsillitis. However, tonsillectomy was performed. Five days afterward she had a severe chill. I was asked to see her and found what was thought to be acute lobar pneumonia with almost complete consolidation of the right lower lobe.

The patient was re-admitted to the Jewish Hospital and soon thereafter began to expectorate foul smelling purulent material such as described by Dr. Peabody. The diagnosis was then changed to pulmonary abscess. Roentgen-ray examination (Dr. L. K. Baldauf) confirmed the diagnosis. The patient remained in the hospital for three months and continued to expectorate enormous quantities of purulent material. The ward was permeated with the odor. As soon as she was able to travel I took her to northern Texas. She recovered completely from the pulmonary abscess and is now the mother of two perfectly healthy children.

In the after-study of this case the points which impressed me were the mistakes that were made. First, the patient was operated upon too soon after acute tonsillitis. Second, she was allowed to leave the hospital too soon after the operation. Third, she should have been observed more carefully for several days after tonsillectomy and before she developed the chill. These mistakes fortunately are not buried as the woman is still living.

I believe Dr. Dabney was one of the first in Louisville to perform adenoidectomy with the patient in the lateral position. It was only after considerable experience as anesthetist that this position was adopted. Great difficulty is sometimes experienced in keeping the patient in the prone position from aspirating blood. The lateral position allows the blood to trickle from the corner of the mouth. I use this position always for adenoidectomy. Of course adenoidectomy is always performed after the tonsillectomy when both are required. The lateral position also has the advantage over the horizontal in that the patient can breathe equally as well, and the force of gravity assists in eliminating the blood and septic material.

Another point to be emphasized, as Dr. Peabody has stated, is that the patient should be carefully prepared for tonsillectomy. It is just as important to prepare the patient well for tonsillectomy as for any other surgical procedure; it is a major operation and should not be attempted by anyone who has not had experience in throat surgery. It is not a minor operation and should engage the serious attention of the surgeon just as much as celiotomy, mastoidectomy, or any other major surgical procedure.

J. R. Peabody (closing): I wish to thank the gentlemen for their liberal discussion of the paper. Dr. Lederman called attention to one point which I omitted and emphasized others that I tried to cover.

While I believe puncturing the substance of the tonsil is a dangerous procedure in administering a local anesthetic, yet this is described as being proper technique by some of those who are performing tonsillectomy under local anesthesia. They advocate introducing the needle through the substance of the tonsil to the capsule and then injecting the anesthetic fluid.

When I entered special practice (1912) the article by Richardson had just been published and I read it carefully. I was impressed with the importance of pulmonary complications following tonsillectomy and have naturally been on the lookout for such cases ever since. Richardson stated that the reason there were not more cases of pulmonary abscess recorded was because it was the habit of those doing this work not to report their unfavorable cases, or they were unrecognized and consequently not followed.

I was especially interested in the case reported and took the trouble to following the patient carefully. Considerable persuasion was necessary to induce him to re-enter the hospital seventeen days after the tonsillectomy had been performed.

HILL BILLY ABDOMINAL SURGERY.*

By J. G. Carpenter, Stanford.

Illustrated cases of appendicitis, perforated and gangrenous appendices, peritonitis, pus—pus, yea, much pus—in the abdomen; and cases of locked bowel. Eleventh hour surgery with saving of life and recovery of patients.

APPENDICITIS AND APPENDICEAL ABSCESSES

T. C., a boy ten years of age, good health, developed appendicitis from a blow over the appendix. Boy was seen by the writer ten days after injury. He had the typical localized pain, over McBurney's point, rigidity of right abdominal wall, right leg and thigh; extreme tenderness on pressure, and a circumscribed globular mass, size of large turnip, over the appendix, was discerned on palpation. Temperature was 103 5-10 and pulse 140; breathing 30 per minute, accompanied with nausea and vomiting. Diagnosis, traumatic appendicitis with localized peritonitis and abscess, which was confirmed by abdominal section. A two-inch incision was made over the appendix, under chloroform anesthesia. The appendiceal abscess was incised and drained; about one quart of pus removed and drainage secured by fenestrated rubber drainage tube; retention sutures were inserted three-fourths of an inch from the lips of the wound and half an inch apart through the abdominal wall, and not tied, but to close the wound later when drainage had been dispensed with and drainage tube removed. Then the lips of the abdominal wound were approximated by drawing on the retention sutures, and later tied, and wound healed nicely by granulation and definitive union.

A boy, nine years of age, in good health, received a blow over the appendix, followed by appendicitis, localized peritonitis and appendiceal abscess, which was circumscribed. He had a pulse of 150; respiration, 40 per minute, and temperature 104, F.; localized pain and tenderness over the appendiceal region; rigidity of right abdominal wall; leg flexed on thigh and thigh semi-flexed on abdomen; and was having two chills per day. This boy had been treated two weeks by one doctor for typhoid fever, and by another doctor two weeks for hip joint disease; but both of the M. D.'s were wrong in their diagnosis and treatment, for in addition to the appendiceal complications, there was now a systemic pyemia with hectic fever, chills and the yellow, dingy skin of blood poison.

My diagnosis was traumatic appendicitis, abscess and peritonitis with pyemia, and that abdominal section should be done at once. The father consented. It was now 8 p. m., and ten miles from any doctor or nurse. Patient and family lived in a new pine log house or cabin, with a large, high, deep and wide fire place, and pine slabs from newly hewed logs were made into a large blazing fire, which illuminated the log cabin as if by electricity. With the assistance of the boy's father and an uncle, who had washed their hands and arms with hot water and lye soap, chloroform anesthesia was done, the uncle giving the anesthetic while the writer incised the abdominal wall, opened the appendiceal abscess and inserted and fixed two rubber drainage tubes into the abdominal wound with sutures; patient placed on right side and fixation retention sutures were also introduced into lips of abdominal wound to close wound permanently when drainage was no longer necessary, and the rubber drainage tubes removed and wound allowed to heal by granulation with proper surgical treatment and dressings. Within two hours the pulse was down to 90, and respiration 24, per minute, and temperature reduced to 100 5-10. Two wash pans of pus were removed by draining through the abdominal wound from the abdomen—patient was directed to lie on right side for sake of drainage. Within two weeks the wound had ceased to discharge. The rubber tubes were removed and the retention sutures drawn and tied; the lips of the wound approximated, and healed in due time by granulation and definitive healing.

A student 25 years of age and former health good, and had returned home from college to assist his father in the hay harvest, cut hay all day with the old time hand mowing blade and developed appendicitis, with appendiceal abscess and right lateral peritonitis and was treated about two weeks for typhoid fever, when the writer was called in consultation and made the above diagnosis, and an abdominal section was accepted at once, at midnight, by patient; and under chloroform anesthesia the abdomen was opened by a two an one-half inch incision. Three galvanized wash pans of pus were removed from the abdomen the latter washed or irrigated with warm normal saline solution—and two large rubber drainage tubes, six inches long were introduced into the abdominal cavity and fixed into the abdominal cavity for future drainage, and also a rope of iodoform gauze was inserted into the wound and abdominal cavity; retention fixation sutures applied. Within two or more weeks, all discharge having subsided, the drainage tubes were removed and wound closed by draining and

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tying the retention sutures, with proper surgical dressings. The wound healed, but about one year after recovery of patient, a small hernia developed in the cicatrix of abdominal wound. This patient had had, for two weeks preceding operation, high temperature, rapid pulse, and the case demanded immediate life-saving surgery at once.

Two similar cases to the above, in two young men, had all the typical symptoms of appendicitis; gangrenous appendixes; abscess had ruptured into the peritoneal cavity and each case had two appendoliths; the two larger appendoliths in each case were about one inch long and three fourths of an inch wide and resembled a blacksmith's forging hammer. The two smaller ones were half an inch long, one-quarter of an inch wide and thick, and were phosphatic in character. The abdomen contained much pus. In one of these latter cases, there was left in the caput coli, a rent of the bowel, two and one-half inches long and three-fourths of an inch wide, from sloughing of the gangrenous appendix and destruction of bowel tissue by suppuration. The lips of the rent were approximated by Lambert sutures, and a patch of omentum was sewed over the rent in the bowel; the peritoneal cavities were irrigated with hot normal saline solution; rubber fixation drainage tubes inserted and sutured to abdominal wound and iodoform gauze drainage supplemented; and fixation retention silk worm gut sutures to close the wound when drainage was dispensed with. Patient was placed on right side to give better drainage and was given proper after treatment, with recovery.

LOCKED BOWELS: CASES

Right inguinal hernia; bowels locked; strangulation within the ring; operation; hernia relieved, and operation for radical cure.

Operation was done on a boy eight years old, in a box house at one a. m., on a dark night, and only one lamp for a light. Case of locked bowel; strangulated left inguinal hernia; tumor size of a cream pitcher, six inches long and twelve inches in circumference; bowels locked for five days; strangulation in the neck of sack. Operation: strangulation relieved, bowel returned in good condition; operation for radical cure done; life saved; recovery complete; no return of hernia after fifteen or more years. Operation done in a box house, in the kitchen on the kitchen table; the room ten by ten feet in size; ceiling six feet and one-half from the floor; the patient a woman 45 years old. Operation was done at 11 p. m.; two coal oil lamps gave the light for the operation. Bowels moved five times within two hours after operation and patient made a prompt and rapid recovery.

Case third: A man 60 years old lived in a dingy log cabin with two rooms. Dust and dirt seemed to be in evidence everywhere. Bowels locked at 6 a. m. Right oblique inguinal hernia; strangulation in the neck of the sack. Operation: strangulation relieved at 11 a. m.; bowel returned in a good, safe, normal condition, and the radical cure. Operation was made and life saved with complete recovery of patient. He lived many years after this operation and, being a bread winner by manual labor, he was able to pursue the even tenor of his way, happy and rejoicing on the way. That life had been saved, his hernia prevented and a radical cure made, for his hernia.

MULTILOCULAR OVARIAN TUMOR

Case 1. In a woman 40 years of age; weight of contents of tumor 85 pounds; weight of sack 15 pounds; total, 100 pounds. Height of tumor from surface of operating table to umbilicus, 30 inches; width of tumor in median line, 22 inches; width of tumor in diameter across the abdomen, 20 inches. This woman in the above condition rode ten miles over a mountain road to railroad station on a pacing mule, to take train to Stanford and Joseph Price Infirmary.

Ten inch abdominal incision made in median line of abdominal wall below umbilicus, over tumor, and the diagnosis of multilocular ovarian cystoma made—having its origin in the right ovary. Tumor was greatly distended; much ascites; adhesions numerous to abdominal wall, organs and womb; many lacerations had to be repaired. A Tait canula was used to perforate and drain the first pocket; then the second, third, fourth, fifth, sixth, seventh, eighth and ninth pockets. Some of the pockets, or rooms of the tumor, were filled with serum; others, liquor sanguinis and blood clots resembling coffee grounds. One pocket contained hair and spiculae of bone and colloid material resembling jelly. After puncture of the inside multilocular cysts and separation of the numerous large, wide and long adhesions, the large sack, being empty, was removed through the ten inch incision in abdominal wall, and the pedicle and right fallopian tube ligated. There were five morgagnian cysts attached to the right ovary, from size of a hen to a goose egg, ready to develop into large par-ovarian cysts. At pocket or locus No. 7, a perforation or rupture of sack had taken place about two months before the operation and the tumor reduced much in size; but with the rent healed, the tumor again rapidly grew to its present size. The patient made a rapid and complete recovery. No rise of pulse or tem-

perature after abdominal section. Recovery and healing of wound was physiological by primary union. Stitches removed on the 10th day. After a period of twenty years there has been no hernia at site of cicatrix, and the good woman has made a nurse of herself and still lives to bless humanity, and the sick and afflicted sings her praises and she sings Dr. Carpenter's praises to the tune of long metre doxology.

Case 2. Patient a woman about 42 years of age, large frame and corpulent, has had an abdominal tumor for many years. Diagnosis, fibroid tumor of ovary or uterus. An abdominal incision of 12 inches made. Abdominal walls extra fat and six inches thick; tumor adherent to abdominal wall and intestines. Many adhesions had to be separated and repaired. A round, slick, pinkish, ashy fibroid tumor was removed and ligated; wound drained and patient made good recovery from operation; but a fecal fistula developed and never entirely healed, and patient lived about six months after the operation; fell asleep and crossed the "Great Divide" into "Glory-Land—and now awaits the doctors who played the good Samaritans in operating on her.

Case 3. Woman 39 years of age, mother of several children, was taken with sudden pain in hypogastric region about 1 a. m., and intense desire to urinate and fixed pain over the bladder. Emptying bladder did not give relief. Palpation and conjoined manipulation found a horseshoe shaped ovarian fibroid tumor with pedicle. Tumor was movable and of considerable size; hard and dense to sense of touch, and each end of the horseshoe tumor could be tilted and moved from either vaginal fornix by intradigital pressure, upward per-vaginam. A six inch abdominal incision was made and the tumor removed. By pressing down the right end into right pelvis and elevating the left end into the incision with the fingers, the origin of the tumor proved to be from the right ovary. The tumor was a pink color, streaked with white lines; was easily removed and only a few fine adhesions; and within the pelvis fitted snugly over the uterus and bladder and caused pressure symptoms and frequent urination and irritability of the bladder. Patient made prompt and complete recovery.

Case 4. A woman 35 years of age; single; health good; menstruation normal except painful first two days; complains of hypogastric pain daily, and worse when standing a long time on her feet or walking a long distance or lifting heavy weights. Inspection reveals lower abdomen larger than normal. A conjoined manipulation and examination discerned an intra-plevic mass attached or incorporated into the uterus and movable with the uterus, either from side to side, forward uterus from within, two inches. Os and cervix normal in size and do not indicate pregnancy. Diagnosis, intraperitoneal uterine fibroid. Patient was informed of diagnosis and consented to an intraperitoneal section.



Multinodular Fibroid of Ovary. Weight 47 lbs.

Case 5. Multinodular ovarian fibroid tumor of right ovary.

The woman was 30 years of age, tall slender, mother of several children, thin abdominal walls and tumor could be easily palpated thru abdominal wall and per vaginam and the diagnosis of a multinodular fibroid tumor made; operation was readily consented to by patient and a multinodular ovarian fibroid tumor was removed thru a ten inch incision of the median line. Patient made a normal physiologic recovery and gained rapidly in health, strength and flesh. In eighteen months gave birth to a fine baby. The pedicle of the tumor consisted of right ovary and tight tube: and the tube tied off close to the right side of uterus; excised and removed.

Case 6 A colored woman 50 years of age; had a multinodular fibroid tumor of abdomen of large size; she was otherwise in good health except, from pressure symptoms, constant fixed pains in abdomen and an irritable bladder, constipation and incapacity to eat a full meal, which later would cause palpitation of the heart and dyspnoea: She was a practical nurse and had seen much surgery and had nursed more than one woman with large tumors, who had died from intestinal obstruction from pressure and was anxious to avoid death, and joyfully consented to an abdominal section.

An incision about 12 inches long was made into mesial line, and tumor exposed; adhesions seemed to be every where in the abdomen attached to liver; stomach; ascending, descending and transverse colon: small intestine and bladder. The tumor contained an immense supply of blood and the arteries and veins enormously enlarged; elongated and tortuous and over distended: Many blood vessels had to be tied; also adhesions tied separated and repaired. The operation required much time; pains taking and detail within the abdomen to successfully remove the tumor, meet the complications and save life; as there was much shock, patient's abdomen was partially filled with normal salt salution. Abdomen closed with interrupted silk worm gut sutures. Patient made a prompt recovery from shock; with normal kidney and bladder and bowel action; with normal temperature; pulse near over 90 until 5th. day, when symptoms of heart failure and dyspnea set up and died on the 7th. day. The wound healed in a physiologic way by primary union.

This was eleventh hour surgery, as patient should have been operated on years previously before; numerous pressure symptoms and complications of numerous kinds had taken place. The tumor weighed 46 lbs. after being freed of the excess of blood. As the early bird gets the worm: the stitch in time saves nine, so should an early abdominal section be made for all intra abdominal and intra pelvic tumors, while the tumors are small, free from adhesions and pressure symptoms and other complications. No doctor or surgeon should dilly-dally or shilly-shally or procrastinate for tomorrow: next week; next month; or next year treatment. *Now!* while time is called today; Delays are dangerous and procrastination is the thief of time; and this case tells of the sad sad past and the might have been would that time could turn back in her flight and make great doctors and surgeons in one single day and night.

Throw out the life line, some one is drifting from scientific treatment and surgery today, Take out the life boat, someone is sinking today: for want of good skillful surgery, Tell them to come: show them the way, Do not delay—do not delay—Eleventh Hour skillfull surgery can not save all: all the way.—(Selah?)

UMBILICAL HERNIA.

Mrs. C. age 38 years, weighs about 150 pounds, general health good, the mother of several children, has been afflicted for several years with a large umbilical hernia. The tumor is twelve inches high or long and 18 inches in circumference, Umbilical ring 3 inches in diameter, consented to abnominal operation for radical cure of hernia, In addition to the umbilical hernia there was a second hernia; a ventral hernia of small size between the umbilical ring and lower end of sternum.

Under chloroform anesthesia a long incision was made in the mesial line. About ten inches in length, including both the ventral and umbilical ring; dissecting out the umbilicus; an operation for radical cure made by Dr. Joseph Prices' method. With interrupted silk worm gut sutures half an inch apart and twenty sutures were used to close this long abdominal wound and care taken to have no dead spaces between the sutures and each kind of tissue brought into thorough and close apposition, peritoneum to peritoneum, muscle to muscle, aponenrosis to aponeurosis; fascia to fascia; and skin to skin.

Presto! with an aseptic rubber adhesive strip of plaster to support the wound and stitches and abdominal wall and an aseptic surgical dressing, the wound healed by primary union in six days; but stitches were left twelve days "in situ;" to protect the wound and abdominal walls and hasten healing; only two aseptic surgical dressings were used on wound to complete the healing of wound and cure of patient.

A most brilliant and successful achievement of surgery. Patient was operated on in a box house and two doctors to assist, one to give anaesthetic and the other to aid in the operation; no trained nurse was present at any time.

Caesarian abdominal section for intra-uterine fibroid at the fifth month of pregnancy. Patient 30 years old, married about 2 years; developed an enormous distention of abdomen and uterus apparently the size of fundus of the uterus, was that of seventh or eighth month of pregnancy, the enlargement of abdomen was due to the intra-uterine irritation of the fibroid within the uterus, at the fundus with a sessile base and at the site of placental attachments and hydrosalpinx; and copious ascites and general ana area; the latter not due to kidney or liver disease; but intra abdominal pressure from the suddenly enlarged and abnormal over distended uterus and consequent (pressure symptoms) and complications of organs and blood within the abdomen and pelvis and interference of the heart and heart action and systematic circulation by intra-abdominal pressure of the enlarged uterus. The hearts action and function and

circulation so interferred with that typical heart murmurs were heard at apex of heart and all over the upper half of anterior chest and upper third of the posterior chest there was extreme dilation of heart feeble apex beat, but the apex beat of heart was not discernible on inspection and palpation. Temperature was 100; respiration 30 to 40 per minute and the pulse was small and intermittent, 120-140 per minute marked mental and physical distress.

Abdominal section was advised as the remedy demanded as a *dernier resort* which, was gladly accepted by the lady and family. Patient being duly and truly prepared from day to day for the operation; was given a hypodermic of morphine Gr. 1-4, hyoscine hydrobromide 21-100 and cactina 1-100 Gr. an hour before operation and another dose just before operation: and twilight sleep induced. Then this was followed by chloroform anesthesia and patients pulse, heart and circulation improved continuously during operation. A rapid abdominal section at mesial line below the umbilicus downward for eight inches; uterus pushed from above and sides by assistant into abdominal incision and opened in mesial line with a minimum of hemorrhage: contents evacuated which consisted of liquor amnii: two dead, five months foetuses, placenta of large size; a rubber tube was made to encircle the uterus and constrict the fundus near the internal os. Then the serreneud applied around uterus, pins were introduced through the uterus and the Koeberly serreneud applied and tightened.

The ovaries and tubes were tied close to the uterus and the uterus removed. The serreneud again tightened and then the sutures interrupted; silk worm gut, applied. The wound closed nicely in the true surgical way, according to Dr. Joseph Price; with no dead spaces between sutures. Approximating like tissues; peritoneum to peritoneum, muscle to muscle; aponeurosis to aponeurosis; fascia to fascia and skin to skin. The wound and stump was dressed antiseptically and with aseptic dressing; the patient was in a better condition everyway at the end of the operation and made a rapid and continuous improvement. No complication except, the second day about 10:00 A. M., acute dilation of the stomach; a rapid formation of gas and disturbed action of heart; last for about an hour which was duly relieved and patient then made an uninterrupted recovery. The serreneud was removed on the eighth day, the stitches on the 11th day with the wound healed: with rest in bed, tonics and restoratives fresh air and sunshine, nutritious food, patient made a rapid recovery of her general health and has never ceased to sing the surgeons praise. She payed a handsome surgical fee and proves her gratitude by evangelistic work for the Great Physician on the Heavenly Throne and her Surgeon who saved her life.

DISCUSSION.

R. C. McChord, Lebanon:—Dr. Carpenter must be a wonderful man to have done all the surgical work he has described. I do not question his honesty in this matter, and I believe he has done every one of the operations he has described. He has great skill as an operator. Dr. Carpenter has done splendid surgical work in his time, and has operated on cases that nobody else would operate on. There is no question about that, and from his report he has obtained good results. He has saved lives, and that is our main object as physicians.

J. Garland Sherrill, Louisville: I had my first surgical case after I left the City Hospital when I thought I knew a good deal about surgery. A young woman presented herself who had an abscess opening at the umbilicus. I do not know yet whether that abscess was due to an appendicitis or to a suppurative tube or ovary. The opening at the umbilicus was enlarged and allowed it to drain.

I must confess that those of us who work all the time in well equipped hospitals do not really appreciate the quality of men necessary to fill the place of the Hill-Billy surgeon. The best doctors I have ever met practically—and I have met some good ones all over the world, were those who had to depend upon their own resources to take care of serious and grave emergency cases. I think we should take off our hats to men like Dr. Carpenter.

Those who were in medical colleges ten or fifteen years ago may not remember the serreneud. Probably they have never seen the serreneud used in the removal of tumors. In the early work on tumors of the uterus there was considerable difficulty in controlling hemorrhage and preventing infection of the abdominal cavity. In the case of a tumor with a long pedicle, Keith, of Edinburgh, brought the tumor out through the abdominal wall, placed sometimes a rubber tube on it, and sometimes the serreneud around it, which was held in place by two metal pins passed through the neck of the tumor and the wire forced down. No hemorrhage occurring, the tumor was cut off; the stump lifted out externally, and the surface packed with iodoform gauze. I wish to say, that, at the present time, I do not believe any real, conscientious surgeon ever makes use of iodoform gauze. The only advantage of it was that it produced an odor more offensive than the material which was

present in the wound. I say that without fear of contradiction.

A number of years ago I came to the conclusion that this thing of putting powders on wounds was all nonsense. From that time on I have not used anything else. I presume we have all arrived at the same conclusion at the same time. Sir Berkeley Moynihan at first used Rutherford Morison's bipp in the treament of war wounds, but he said in a moment of spiritual exultation he decided to try simple cleansing of the wound and the use of methylated spirits, leaving off bipp, and the wound did just as well as when he used bipp. If we keep these wounds clean they will heal.

One advantage of the Hill-Billy surgeon is that he has less infected cases to deal with than the city surgeon, but he must have a special amount of skill to get results.

Dr. Carpenter reports one death, and the majority of us know that if we were to look back over our work we would doubt his report as being serious and earnest. If he did not have any deaths, he is much better off than the rest of us. We sometimes have a patient die of embolism two or three weeks after operation. The most beautiful surgery done is sometimes marred by the patient dying from other intercurrent trouble. Whether we are in a city surrounded by every surgical aid, such as good surgical nursing, or in the county district the object of our work is the same, and the relief should be the same.

J. G. Carpenter, Stanford (closing): In regard to the use of iodoform gauze. I find big men like Dr. Sherrill were using iodoform gauze in the early days of surgery. If you keep the wound clean and sterilized, there is no need of using iodoform gauze. In these cases I have put on one dressing when I closed the wound, and would take the packing off to see how the wound was getting along.

There is another thing about this hill-billy surgery that helps us a whole lot. I have only one assistant to give an anesthetic in these operations. I am a peaceful man; I do not have to cuss my man; I do not have any nurse to cuss. I work right along rapidly, get rid of the pathology to the glory of God, and you see the results I have obtained.

Treatment of Club Foot.—The apparent deformity having first been fully corrected in the ordinary way by tenotomy, manipulation, and splinting, Bankart secures permanent fixation of the foot in a corrected position by means of an artificial ligament attached to the fifth metatarsal bone and to the outer side of the tibia.

LOCAL AND REGIONAL ANESTHESIA IN MAJOR SURGERY.*

By Walter I. Hume, Louisville.

Since the days of Hippocrates medical men have zealously sought means of pain control and particularly, it appears, the pain occasioned by injury or operation. Efforts toward the production of local anesthesia were attenmpted at the same time that experiments in general anesthesia were being made. Many means were proposed and tried out in both of these fields in the early days of medicine. Some were purely fantastic, others ineffective, and yet others effective but dangerous we are told. We have traveled far and upward, however, particularly in the last century. The practical use of chloroform in 1847; ether in 1846; nitrous oxid in 1844; discovery of use of hypodermic needle (Wood-Edinburgh) in 1853; the introduction of cocaine in 1884 (Keller); the separation of the active principle of the suprarenal gland in 1901 (Takamine) and the introduction of novocaine in 1905 (Einhorn) each marks a step in advance. But perfection is not yet, for local anesthesia has not come into very general use in major work and in spite of trained anesthetists and improved methods of administration and combating undesirable effects, general anesthesia has a mortality all its own, not to mention after effects ranging from the unpleasantness of nausea and vomiting to crippling morbidity. The figures representing this mortality vary widely from different sources, but the fact of its occurence is, I believe, generally admitted. Yet, to the writer, neither the small mortality nor the often questionable morbidity ascribed to general anesthesia is the chief objection to its use in certain cases. I mean that, when a patient bearing a heavy load imposed upon him by a surgical disease submits to general anesthesia, then to a necessary operation, his vital powers may be so depressed by this combination that he is unable to fight through and a fatality, usually ascribed to the operation, results hours or days later. Now any mortality, be it ever so small or be it the result of anesthesia or of surgical procedure or both, is not a pleasant thing to contemplate and the expression "irreducible mortality" should have no place in our literature. For to the victim who succumbs, as some one has remarked, the mortality is 100% and whether by improvement in diagnostic methods, in surgical technic or advance in anesthesia, we must fight this mortality to the vanishing point where possible. The surgical hazard, expressed as the sum of

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the effects of local surgical disease plus general anaesthetic plus operation, is still so formiable as to cause dangerous delays and often indefinite postponement of necessary operations. By a study of means and methods, of fatalities and near fatalities thru a surgical experience of ten years the writer has sought to reduce the surgical hazard and in this paper, while not detracting one jot from the credit due those who have labored so long and well to place general anesthesia on its present high plane, wants to voice his conviction that local anesthesia when indicated and properly practiced will reduce this risk and at times prove a life-saving procedure. While nothing of originality is claimed and no pretense of having covered the entire field of local and regional anaesthesia is made yet a personal experience, including some forty major operations, recently reported, on the abdominal wall and abdominal contents and various procedure on the head, neck, chest wall and extremities, form the basis of the observations made.

With the very foundation of local anesthesia are inseparably connected the names of Corning, Halsted, Reelus, Schleich, Crile, Matas, Cushing, Bier, Oberst and Braun, an illustrious list. They led but the profession in general was slow to follow though local anesthesia has long been the method of choice in minor work. More recently the continued efforts of some of these operators and investigators, together with the work of Panchet and Labat in France and that of Allen, Farr, Bartlett and others in this country, have broadened the indications and greatly extended the field of usefulness of the method. Now, though certain rather definite limitations are recognized in practice, it is possible to perform almost any operation without general anesthesia. We are reliably informed that in many European clinics 50% to 60% of all the surgery done is accomplished by means of some form of local or regional anesthesia. In this country an increasing percentage of operations under local is being reported and the combination of local and general, (nitrous oxide or ether usually, though the French use ethyl chlorid), is extensively used in some of our larger clinics. Farr, in recounting an experience of two thousand abdominal operations, declares that he does 80% of this work under local and that "the scope of local anesthesia depends upon the surgeon's attitude which in turn is a fair index of his ability to use the method." (Am. J. of Obst. and Gyn. 80: 3—653 Dec. 1919). It is mainly, I believe, because no large amount of major work is done under local in our community, and that the education of one's clientele is such a slow process, that I am not able to report such large percentages as those given above. We have often had patients remark that they did not know that operations of any kind were possible without general anesthesia. We do a much larger percentage now than in 1916 when my last paper was published. However, I think it may be fairly stated that 50% to 60% of the surgery done today could be easily and satisfactorily accomplished by local anesthesia methods. Now, if one is satisfied to face a small but definite mortality at the time of induction (chloroform 1: 2060 and ether 1: 5930—Neuber—quoted by Allen) in cases presenting no contra-indication to general anesthesia and to face the occasional development of pneumonia, anuria, etc. later, there yet remains an important group in which local is specially indicated, i. e.: very toxic cases (e. g. toxic goitre), cases of defective hearts, diseased kidneys or lungs, diabetes mellitus, those in severe shock, inanition cases and in the very old. Some writers recognize no contra-indication to the method. Others, (Dyas—Surgery Clinics 2: 193—Feb. 18) consider it contra-indicated in acutely inflamed areas, in very young children and in hysterical persons. It is of no value in operations on the chest contents and of limited but very definite value in intra-abdominal work. In general, it may be said that in dealing with infected or cancerous tissues local infiltration should not be practiced and the blocking of such areas at times proves impracticable. Likewise, it should be noted, any extensive exploration within the abdomen or the separation of extensive adhesions of visceral to parietal peritoneum calls for general anesthesia.

The term "local anesthesia" besides its broad application to this whole subject is here used to mean anesthesia by infiltration of the tissues at the site of operation (Shleich) and regional anesthesia, in my experience, includes circum-injection (Hakenbrueh) and nerve blocking, (conduction or block anesthesia) at a distance from the field of operation. We have had a small but satisfactory experience with sacral methods and none with intra-spinal or splanchnic, believing as we do that the first named methods, singly or in combination, meet practically all indications. An objection often urged against infiltration is that the solution in the tissues hinders healing and favors suppuration. This is denied by many authors and has not been my own experience. Farr (N. Y. State Med. J.—Feb 22) declares that the solution properly handled postively does not retard healing. Errors in technic or the debilitated cases so often selected for local anesthesia will usually explain these poor results whether local or general anesthesia is used.

At any rate, nerve blocking may now be practiced, in most instances, to avoid such occurence, the injection being at a distance from the field of operation. Regional (Block) anesthesia presents another advantage in that it may be administered outside of the operating room by an assistant thus saving time and work for the operating team. Labat, now in this country and others have lately demonstrated the remarkable possibilities of the latter method (regional). Success with this method, however, may be attained only by those who have an exact knowledge of neuro-anatomy and have had special technical training. Instead of regional anesthesia in the strict sense of that term, we use mainly massive infiltration or circum-injection.

The management of local anesthetic cases is quite different from the routine for general narcosis. Psychic control of the patient is especially important. To have a patient meet and converse with another who has had a successful operation by this method usually has a steadying effect. Yet the safest plan, as a rule, is to discuss guardedly with the patient every step to be taken and particularly the part he is to play and the sensations he is likely to experience, then tell him of the advantage to be gained. Once his confidence is obtained and he understands the plan to be followed, allow not the slightest deviation from that plan and make your word good even to the smallest detail. It is absurd to begin an operation by making a half dozen skin punctures with a dull needle after promising that there will absolutely be no pain. One operator who was "trying out" local, began, we are told, by pinning a towel to the unanesthetized skin of the perineum. Such crude handling or any lack of confidence on the part of the surgeon or attendants as to the outcome of the procedure may quickly destroy the patient's morale and failure is invited. Occasionally, depending upon the kind of person to be handled, a patient is allowed to believe that he is merely being prepared for operation and that the work being done is of only minor importance. Such ruses often work well. A good night's sleep preceding operation should be assured by use of some soporific at bedtime (Veronal, Bromides, Chloral, etc.). No laxatives are given unless required because of the surgical work to be done and no fasting is required except for the same reason. In fact, a light breakfast is allowed as a rule preceding operation and a normal diet may usually be continued immediately after operation. Nausea, if present, is slight and there is no gaseous distention. Vomiting seldom occurs. Morphine gr. 1|6 and Scopolamine 1|150 to 1|300 are regularly given one hour before operation: occasionally this dose is repeated a few minutes before time for operation. Soft pillows and pads for the operating table should be provided,—our patients complain more of discomfort occasioned by position and by the table than any thing else,—a moist gauze should be placed over the eyes and sips of water and slight changes of position may be allowed. A moral anesthetist whose duty it is to take care of the patient's comfort, to explain away any thing which tends to excite him and to watch for changes in his condition, is not a necessary but a very desirable adjunct in local work and in combined local and general anesthesia he is to be ready on signal from the operator to administer ether or gas.

The technic of anesthetization is of paramount importance. When ready for the injection inform the patient that the hypodermic (as already explained to him) is to be given. Use a very fine and very sharp needle to produce a dermal wheal and hurt but once as a rule, i. e. direct the anesthesia thereafter from this point and introduce the needle well within the painless zone each time. The solution should be isotonic, at body temperature, and otherwise free of irritating qualities and should be injected slowly. After reaching the subcutaneous tissue inject the solution ahead of the needle as the point advances. If in a vascular area withdraw the piston slightly before injecting any considerable amount to see if the needle point may have entered a blood vessel, and in the neighborhood of large vessels enter the needle without the syringe attached and relocate it if there is a backflow of blood. Puncture of a blood vessel with a fine needle is not dangerous but the injection of the solution into the blood stream is. This accident probably explains the toxic symptoms occasionally noted. A painless area painlessly made is the ideal to be striven for. Once the field is made insensitive the operator may proceed as under general narcosis except in certain particulars to be noted. Don't be afraid to use a sufficient quantity of the solution, then give it time to become effective—usually 10 minutes in infiltration and 30 minutes in Block anesthesia—before beginning the incision. Besides the technical generalities just mentioned there has been developed a special technic, based on sensory nerve supply to the parts concerned, the kind of tissues to be encountered and kind of work to be done, for almost every separate operation. A discussion of them here cannot be entered into for lack of time.

As to operative technic under local it may be said that blunt dissection has small place and sharp knife dissection is the rule; that traction should always be gentle and should

be eliminated where possible; and that within the abdomen, suction should largely replace sponging and table tilting serve the purpose of packs and retractors where possible. Gentle handling of the tissues in any situation is necessary. On the whole, work under local certainly exerts a refining influence on one's technic tending to the production of less trauma with the accomplishment of the same ends. That the method enforces a hardship on the surgeon in handling the tissues, I am willing to admit; dexterous gentle manipulations mark the good operator's work by any method.

Tho cocaine and other anesthetic drugs serve useful purposes, only novocaine, (Procain) need be considered here. In conjunction with suprarenin (Synthetic) it fulfills every requirement in local anesthesia. It is practically non-toxic in any reasonable concentration or amount; it is not in the slightest degree irritative at time of injecion if properly prepared and there is no after pain, hyperemia, inflammation or induration following its use; it can be sterilized; and anesthesia lasts long enough for the performance of any ordinary operation. It is not habit forming. I agree with Dr. Babcock, of Philadelphia, that many failures or partial failures are recorded because not enough solution is used. He states (W. Wayne Babcock, Surg., Gyn., and Obst., 21. 193—August, 1920) that he uses a ¼% solution containing one part to 100 000 of epinephrin in decinormal salt solution and considers 500 c. c. of 1% and 2000 c. c. of ¼% about the maximum to be employed and has even exceeded these amounts on certain cases without untoward results. He further states in the same article that in complicated multiple nerve anastomoses that he has operated for four and one-half hours without return of sensation. Our practice is to use one-half of one per cent solution for general infiltration work, except that when large areas of fat and muscle are to be anesthetized one-fourth of one per cent is used. For nerve blocking and for certain difficult or limited areas we use 2% solution. The usual strength of Suprarenin is kept at about 1: 100 000 tho this at times is varied somewhat owing to the vascularity of the tissues to be encountered and probably time of operation, etc., and of the weak solutions of novocaine 500 to 600 c. c. may be used. An attempt to work in a poorly anesthetized area will result in failure. The key to success is enough solution properly prepared and properly placed in the tissues with time enough for it to become effective. Just how much solution is required for any given operation will depend on the character of the tissues, the method employed, (infiltration, or nerve blocking or both) and the experience of the operator. I once performed an uncomplicated herniotomy in a lean subject with 20 c. c. of novocaine solution without complaint on the part of the patient; other herniotomies have required several ounces. We have observed no serious toxic symptoms in any case following novocaine-adrenalin-anesthesia.

As to the armamentarium for local and regional anesthesia a few words will suffice. Many ingenious types of apparatus for the injection of the solutions have been brought forward in recent years. Among them Farr's pneumatic injector, Dunn's automatic syringe and Labat's specially constructed syringes and needles. Each has its advantages. However, we prefer 5, 10 and 20 c. c. all glass Luer type syringes with eccentric tip and slip needles. These serve all puropses and are easily sterilized and kept in condition and are easily replaced. Massive infiltration can be done with a 20 c. c. syringe as rapidly as it should be done. One should become accustomed to one type of apparatus. The one thing demanded is that the apparatus work perfectly when needed. We use a variety of needles but they are mainly of two types. i. e. short, narrow needles for skin wheals and long fairly blunt flexible needles for deep work. Special graduates for solutions are convenient but not essential.

The subject of regional and local anesthesia can scarcely be summarized in a paper such as this. Many points of importance have been left out and discussion of those mentioned has of necessity been limited. However, this brief may serve to direct attention to the fact that local anesthetic methods alone or in combination with gas analgesia (e. g. analgesia as practiced in obstretics) are slowly but surely gaining into the field of major surgery and while no doubt general anesthesia will continue to be the method of choice in that large class of cases in which there are no contra-indications to its use, the splendid thing about local is that it is helping out in the bad surgical risks, e. g. goitre, intestinal obstruction, shock cases, etc. The faith of medical men in the method is attested by the number who choose for operations on themselves and their families. Novocaine-adrenalin anesthesia adds nothing to morbidity and should show no mortality immediate or remote and, in brilliant contrast to general anesthesia it adds nothing to shock (Crile-anoci association). To him who masters the technic and the neuro-anatomy of each separate part and patiently practices the art of local anesthesia will come the reward of lives saved that

would otherwise be lost. The following conclusions, while they do not exactly coincide with current practice are warranted by my comparatively small experience and are supported in the main, by some of our foremost surgeons and general anesthetists.

1.—Local anesthesia is of such considerable and growing importance in major surgery that it is the duty of every surgeon to become proficient in its use or to see to it that an assisant or his anesthetist does.

2.—Almost any operation may be accomplished under local alone, but the combination of local plus gas analgesia, at critical periods, is recommended in intra-abdominal work.

3.—Local is the method of choice in strangulated hernia, in certain cases of intestinal obstruction, in typhoid perforations, (Cushing), for limited exploration in bad risks, for late toxic goitre and for drainage in empyema, abcess of the liver, certain cases of appendiceal abcess and empyema of the gall bladder; and in general in bad risk cases and where multiple stage operations are usually recommended.

4.—The chief drawback of the method is the psychic trauma the patient suffers. The solution of this problem lies in the thorough training of the operating team, education of the patient and the use of morphine or morphine and scopolamine to effect.

5.—Routine comparative observations of the condition of the patients, during and following operations under general and local anesthesia wil convince the most skeptical of the greater safety of the latter.

Results of Treatment of Concer of Uterine Cervix.—From Ross' study of 475 cases in which various forms of therapy were employed, it would seem that in very early cases of cancer of the uterine cervix treatment by surgery alone gives good results. Surgery in combination with radium gives slightly better results than surgery alone. In operable but not early cases treatment b ysurgery alone or combined with radium gives the best results. Radium alone or Percy cautery alone are of equal value and both less efficient. If radium is not available, ePrcy cautery should be used. In cases considered inoperable because of extension to the vagina surgery gives the best results and radium is disappointing. In inoperable cases radium, alone or in combination with cautery or surgery, is the only effective agent. In advanced cases radium is superior to all other methods but not curative. The incidence of fistula is higher with the Percy cautery than with any other method.

A CASE FOR DIAGNOSIS.*

By Octavus Dulaney, Louisville.

I have a very unusual case to present to you, the patient having been examined by many physicians, but a definite diagnosis is yet to be made.

The patient is a pupil nurse, aged 17 years, from an adjoining state. She has marked nystagmus and vertigo with falling to the right. Vomiting is also present; she says she vomits every meal. In February, 1922, she had a mastoid operation performed and gives the history that two days afterward she began to vomit and had vertigo, which subsided in a few days. She now complains principally of vomiting, vertigo, and constant pain with tenderness over left mastoid.

She gives a history that seven or eight weeks ago she had a discharge from both ears. Vertigo and vomiting returned and has been constant since. The right mastoid was operated upon February the 24th, with a history of good results obtained at that time. The roentgen-ray shows both sides negative. Romberg test positive. She can turn her head to the left or right or in any direction but will invariably fall to the right.

May 11th, a Barany test was made and every response to stimulation was absolutely normal. When turned to the right or left. you will observe a decided spontaneous, horizontal nystagmus. After the vestibular labyrinth is stimulated in the Barany chair she falls in the right direction, that is the responses are normal. Spontaneous nystagmus, horizontal in direction, without labyrinth involvment is a peculiar condition rarely observed, and especially so when past-pointing is also normal.

This girl has lost about twenty pounds in weight since February. She gives the history of pain in the right ear beginning in September of last year. She was then a nurse in a Chattanooga, Tennessee hospital. In February of this year pain recurred and became more intense, but the vomiting and falling to the right was not noticed until after the mastoid operation. Her hearing in both ears is normal, which would eliminate trouble in the labyrinth. It is hard to understand what is producing the nystagmus. She complains now of pain and tenderness over the left mastoid region with increasing symptoms, especially so since admission to the hospital.

I recall having operated upon a patient complaining of similar symptoms two years ago. The mastoid was of the eggshell type, all the cells being completely destroyed. On opening the mastoid I found complete de-

*Read before the Jefferson County Medical Society.

struction had occurred like a radical mastoidectomy had been performed. Both the roentgen-ray and transillumination showed the mastoid clear. In that particular case temporary relief was secured. The patient before you also had relief for a short time after the operation performed by Dr.—. The other patient I have mentioned was not completely relieved until I operated upon the other side three or four months later. After that time she had no further symptoms and remained well.

The patient before you has the regurgitant type of vomiting every time she eats. Her stomach has been examined by the roentgen-ray and nothing abnormal was found. The reason she was sent to the hospital was on account of tenderness over the left mastoid region. However, roentgen-ray investigation shows the mastoid clear.

Past-pointing in this case is normal in every direction. The Barany test did not produce any nausea. Wasserman test of blood and spinal fluid negative. Analysis of the gasatric contest shows nothing abnormal. The patient has complained at time of pain in the right pelvis.

DISCUSSION.

W. E. Gardner: I saw this patient for a moment on the ward a day or two ago. I did not notice any nystagmus at that time, and it was my opinion that the vomiting was an hysterical manifestation. She shows some definite nystagmus now. There is no chocked disc, no inequality of the reflexes, no paralysis and no motor disturbance of any sort. Not being able to discover any cause for the nystagmus I am inclined to attribute the symptoms to hysteria. She does not have projectile vomiting, it is purely regurgitant in type.

The question arises whether this may not be congenital nystagmus. We know this often occurs in the albino type of individuals, and this girl while not an albino distinctly simulates that type. I have wondered if this might not be congenital nystagmus. Her falling to the right may also be an hysterical manifestation, but of course we have to consider the question of cerebellar disease. We cannot eliminate this without further observation as the Barany test is negative.

I would venture the diagnosis of congenital nystagmus with hysterical manifestations.

John J. Moren: I saw this girl on the ward day before yesterday. She has hemianesthesia of the left side. There is no disturbances of the nasal or corneal reflex. I believe the majority of her symptoms are hysterical in origin. I am unable to explain why she has nystagmus and invaribly falls to the right.

I recall a case something like this occurring in a man who had a skull fracture. When standing he would fall to the right invariably. When his head was turned to the side it would stop his falling. This man did not have any ear symptoms. I saw him a year afterwards and he was then in good physical condition, but still had this falling sensation. Whenever he closed his eyes while standing he would fall to the right.

My impression of a change in position of head stopping the falling is an indication that it is a labyrinthine disease instead of cerebellar or cerebral disturbance. This girl stood much better when the head was turned to the left. Whether that indicates disturbance of the right or left labyrinth I do not know. I believe the falling has a pathological basis. Whether the nystagmus is congenital or hysterical I do not know, but in my opinion the majority of her symptoms are hysterical.

O. Dulaney (closing) Labyrinthine disease in this case can be eliminated with the following test:

Patient standing, heels together, eyes closed, turning face to right, she falls to right. Then when patient's face is turned to left she still falls to the right. With labyrinthine involvment, turning face suddenly to left she would fall forward.

Another feature which may be of interest is that this patient gives a history of the ocular nystagmus beginning five years ago. When seven years of age she had pertussis, followed with a discharge from both ears which soon subsided. So this might have been chronic or latent mastoid trouble beginning when she was seven years of age or now ten years ago.

Certainly the nystagmus and falling to the right with persistent vomiting must mean a pathological lesion, and the question now is to definitely localize it. As to whether the vomiting is hysterical in origin or not is quite doubtful. Naturally a girl being incapacitated as long as she has been would show some hysterical symptoms. However, I do not believe that her manifestations have an hysterical basis. There is unquestionably some disease of the brain which has thus far escaped localization.

If spontaneous vertical nystagmus was present it would point to disease of the brain stem. Spontaneous horizontal nystagmus always indicates labyrinthine disease. In many respects the case is very puzzling. We cannot say there is involvment of the brain stem because she has no vertical nystagmus.

PYONEPHROSIS WITH MULTIPLE CALCULI IN A CHILD OF TWELVE YEARS: CASE REPORT. *

By Guy P. Grigsby, Louisville.

This being the first case of pyonephrosis with calculi that I have seen in an individual under the age of twenty years, my interest was aroused as to the frequency of such conditions in children. Frank Hinman (Journal of the A. M. A., January 22, 1921) citing statistics collected by Bokay, states that of 1836 children under fifteen years with urinary calculi, 1309 were visceral, 508 were urethral, and only nine of the total number had renal stones. From these statistics and careful reading of available literature, I am convinced that such conditions are quite unusual, and because of their rarety I thought it might be of interest to exhibit this patient and relate the case history.

This little girl, Hazel G., is twelve years of age. She was admitted to the Children's Hospital February 2, 1922, on the service of Dr. W. B. Owen. The presumption was that she had Pott's disease since there was a discharging sinus in her back. Investigation by Dr. Owen revealed that the child did not have Pott's disease and she was referred to the general surgical service thus coming under my care.

According to the history obtained the parents are living and in good health. She has one sister thirteen and a brother of eight both healthy. Two years ago the patient began complaining of severe pain in her back and right hip. She was seen by a physician in the town where she lived who thought she had spinal or hip-joint disease. She was kept in bed for some time and gradually improved.

About one year ago she began to lose weight and there was recurrence of pain. A roentgen-ray examination was made and her parents told that she had "curvature of the spine." An abscess formed which soon evacuated spontaneously and left discharging sinus in her back. For the last eight months she has been treated by a chiropractor for the supposed spinal curvature. From time to time the abscess has refilled and has been evacuated through the old sinus.

Examination February 1, 1922, shows a poorly nourished and very anemic child. Her temperature varies from 99 to 101 F. There is a slight bowing of the spine to the left due to the efforts of the child to protect the site of the old abscess. There is a discharging sinus just below the right kidney region from which thick pus escapes. A tender mass can be felt in the right kidney area. Report of roentgen-ray examination made by Dr. B. W. Bayless shows the right hip, lumbar vertebra and left kidney negative. A large number of calcareous deposits are noted in the right kidney,—evidently tuberculosis. Cystoscoptic examination was made by Dr. C. G. Hoffman, February 6, 1822. Capacity of urinary bladder about 400 c. c.; trigone, vesical neck and right ureteral orifice injected and edematous; left orifice normal. With the foregoing exceptions bladder examination negative. The phenolsulphonephthalein output normal from left kidney; practically no excretion from right kidney.

Based on the foregoing reports and the physical findings a diagnosis of tuberculosis right kidney was made. Since the left kidney was apparently normal, removal of the right kidney seemed advisable. We deemed it wise, however, toendeavor to improve the patient's general condition before operating. On March 7th. we considered her condition satisfactory for nephrectomy.

Through a posterior incision the right kidney was removed without great difficulty. It was densely adherent to structures about the spine, and was very large extending toward the iliac crest, which acounts for the rather low incision made. There was one immense calculus which filled the renal pelvis and obstructed the calyces, besides many other smaller concretions. An abscess cavity occupied about half the kidney; the remaining portion had undergone calcareous degeneration and was filled with sandlike material. The kidney was absolutely destroyed so far as function is concerned. A small wick drain inserted into the wound and left in situ for twenty-four hours and then removed. The old sinus track was not dissected out.

The incision healed by primary intention and there has been very little discharge since the drain was removed. The patient's improvement has been remarkable and she has made a splendid recovery. I am sure had any of you seen her before the operation, to look at her now you would hardly recognize her as being the same child. Since the kidney was removed the spinal curvature is no longer noted.

Pathological report by Dr. Stuart Graves: Grose description: specimen consists of kidney, 100 x 500 x 40 mm. Portion is dark red and smooth; other portions pale gray and irregularly lobulated. Cortex 5 mm. thick and well differentiated from medulla in red portion. Several cavities present in cortex of gray area. Cavities contain yellowish gray to green thick fluid and sand-with yellowish gray stony concretion. Cream like particles. Several calyces are plugged colored areas showing caseous changes are

*Read before the Jefferson County Medical Society.

found in medulla of gray portion. Microscopic diagnosis (March 9, 1922): No evidence of tuberculosis. Additional sections (March 14, 1922) show no evidence of tuberculosis. Gross and microscopic diagnosis: chronic pyonephrosis with calcification.

THERAPEUTIC PROBLEMS OF ACUTE MIDDLE EAR INFECTION.*

By M. F. McCarthy, Cincinnati.

Any discussion of the therapy of acute middle ear disease must of course include consideration of the causes of such processes, as well as the prophylatic measures to be taken.

In as much as practically all middle ear disease is the result of infection ascending the Eustachian tube from the postpharyngeal space, the prophylatic measures taken deal for the most part in combating infections of the nose and throat. These prophylatic measures are of particular importance in children, especially during the course of some one of the acute exanthemata. During childhood, the post-pharyngeal mass of adenoid tissue, commonly known as the adenoid, is proportionately much larger, and when irritated and swollen, lies in much closer opposition to the mouths of the Eustachian tubes. During the active stages of the acute nasal infection, which accompany most of the acute exanthemata, with the nose and upper pharynx plastered with highly infectious mucus, and with the mucous membrane and nasal tissues irritated and swollen to a degree that almost accomplishes, and often does accomplish, complete nasal blockade, it is really remarkable that there are not more ear infections in the young.

In children, the therapeutic measures to be adopted deal largely with means taken to insure ample post nasal and throat air space in children showing signs of more or less constant obstruction to nasal breathing. Also this includes the class of children having, what the parents so often describe as frequent head colds, whether they show signs of nasal obstruction, or not. Removal of the tonsils and adenoids is the only worth-while prophylactic measure in cases of this type, taking into consideration, of course, the degree of lymphoid hypertrophy.

The only accurate method of arriving at a conclusion concerning the state of the post nasal relationship, and the size of the post nasal adenoid tissue in children is with the finger. This method, while accurate, is not only somewhat painful to the patient; but is terrifying, as well as objectionable to the parents. A reasonable estimate of the size of the adenoid tissue in the post-nasal space can be made, based upon inspection of the size of the tonsils, as hypertrophy of the lymphoid tissues is almost always synchronous.

However, in children, where the infection of the nasal passages has already taken place, any measures looking toward the lessening of the swelling of the nasal mucous membranes and tissues, and so to an establishment of nasal drainage and to the act of nasal respiration, are prophylatic measures against middle ear infection. The same is true of measures taken to combat the virulence of the infecting organisms, to limit or retard the speed of its growth.

The use of fluids, or ointments, in the nose, for the purpose of lubrication of the nasal surfaces, or for the purpose of soothing inflamed tissues during the early stages of severe acute nasal infections in our opinion is absolutely contraindicated. The only reasonable purpose for dropping fluids into an already flooded nose would be that the fluid so used would combat the infection, or shrink the tissues, and so aid nasal drainage and respiration. The only valid purpose for inserting ointments into a nose, which was the seat of a severe infection, would be that these ointments contained some agent for the limitation of the growth of the bacterial flora, or that they contain astringent re-agents.

In children old enough to understand, it is very important to warn them against too vigorous blowing of the nose. Some children, and adults as well, are greatly annoyed by the presence of thick tenacious mucus in the nose, and by their over-vigorous efforts to dislodge it, will force the fluid into the Eustachian tubes, and so convert discomfort into danger. When nasal infection has passed the acute and most virulent stage, and the patient finds difficulty in dislodging the mucus, means can be taken to make the mucus more readily dislodged, by the use of bland ointments or oil sprays, if desirable. The objection we have to oil sprays is that the public has come to believe so largely in their efficiency, that even some professional minds are misled into accepting them as a necessary part of fall nasal therapy. In our opinion, their value is greatly over-estimated, and many times far from being of service, they do actual harm, inasmuch as their use lulls all concerned into a false opinion that something of real therapeutic value is being accomplished. The old time honored camphor—menthol-oil sprays has, in our opinion, very little therapeutic value, other than as a placebo, or a lubricant.

Too much emphasis can not be placed upon constant inquiry into the state of the ears during the course of the diseases incident to

*Read before the Harrison County Medical Society.

childhood, as well as through the course of those conditions affecting adults, in which there is nasal irritation and increased nasal bacterial growth of virulent types. In infants, or very young children, where the cause of a rise in temperature is in doubt, even though there are no indications of ear involvement, as is usually evidenced by pulling or rubbing the ears, the ears should always be examined. Some times a child may be so prostrated, that there will be no complaint of ear pain, or discomfort, and the only indication given may be a deafness in one or the other ear, a condition which may be easily overlooked, or masked. We must not forget pus may lie in the middle ear for weeks before rupture of the tympanum, or may not rupture through at all. Instead of draining externally, it may drain internally, backward through the aditus ad antra, into the antrum, and so into the mastoid cavity. Within the last twelve months, we have had the privilege of caring for three cases needing drainage of the mastoid cavity for purulent mastoiditis with bone destruction, secondary to acute otitis media, which had never been attended by otorrhea. "Eternal vigilance is the price of safety."

If there is any value in the use of heat in acute conditions of the middle ear, other than for the relief of pain, it lies in the early application of it. This, of course, is dependent upon the early recognition of incipient middle ear changes, as evidenced by changes in the color and contour of the tympanic membrane. Sharp twinges of pain, a feeling of stuffiness in the ear, a decrease of hearing, or the presence of tinnitus, may make more imperative the need for aural examination. If, however, there is no change in the contour, or color of the drum of the offending ear, one can be almost certain that nothing of pathological importance is going on in the middle ear. The recognition of changes in the tympanic membrane, followed by the immediate use of heat, is often apparently of considerable therapeutic value, aside from the comfort afforded. In our opinion, too great value is put upon the use of the various ear drops in these cases, and not enough attention given to seeing that the ear is kept constantly warm. There is no objection to the employment of both; but of the two, the consistent use of heat seems to be of the greater therapeutic value.

The ways of applying heat are numerous and simple. Three to four hourly irrigations, with water as warm as it can be borne, using the contents of a fountain syringe bag, followed by the use of glycerine containing 1 per cent Phenol, dropped into the ear warm, and thoroughly covering the ear with a warm pad of some description, on top of which constant heat is applied from a hot water bottle, or electric pad, forms an ideal method of local therapy in the early stages of these conditions, before the drum has ruptured. Once the discharge is established, however, the use of the phenol glycerine solution is to be abandoned, as it serves only to interfere with proper drainage. The irrigations can be continued, with much benefit, through the transmission of the heat from the solution, as well as the encouragement of drainage, by the washing out of the heavier particles of coagulated serum and pus from the immediate neighborhood of the opening in the tympanic membrane. Inasmuch as these irrigations may penetrate into the middle ear, following perforation, it becomes necessary to use either boiled water, a weak bichloride solution, or boric acid solution. The choice naturally falls upon bichloride solution, used in a one to eight or ten thousandth dilution, as it is by far the simplest and easiest to prepare. Some objections to its use have been offered, on the grounds that it is somewhat irritating to the wall of the canal and to the tympanic membrane, as well as to the mucous membrane of the middle ear itself. These, however, are largely matters for academic discussion, and not of practical importance. There are many of us who have never seen a case in which marked irritation followed its use, and if undue irritation seems to be occurring to the canal wall, the use of another solution may promptly be taken up.

The value of irrigation rests largely upon the thoroughness with which it is given. The douche bag should be at least from a foot and a half to two feet above the level of the head, and the solution must reach to the tympanic membrane. If following irrigation, there is still pus in the canal, the efficiency of its use has been considerably diminished. The solution must be as warm as the patient will tolerate it, and not less than a quart should be run into the ear, unless dizziness supervenes, in which event the irrigation should be stopped for that particular time. If the irrigation is persisted in, the patient may become quite dizzy and even vomit, due to the effect of heat upon the labyrinth. This, however, should be no cause for alarm, nor for discontinuance of the use of irrigations, as is can be entirely avoided by stopping the flow of water promptly upon the first indication of the slightest dizziness.

The indications for myringotomy, or paracentesis as it is probably improperly called, are usually clean cut. The appearance of the tympanic membrane is, of course, the most important of the deciding factors. However, in cases where, due to the doubtful appear-

ance of the membrane, there is a question as to the advisability of myringotomy, one must take into consideration the duration of the symptoms, the amount of pain, and the degree of auricular and peri-auricular superficial tenderness that is present. It has been our experience that where there is early present a degree of tenderness of this type, we are apt to be dealing with a fairly severe type of infection, and that in the presence of a doubtful drum picture, that myringotomy is indicated. One has to take into account the degree of the bluge present in the tympanic membrane, the height of the temperature as an evidence as to how much reaction is taking place to the infection, and the amount of hearing lost in the affected ear. In a broad way a summation of this problem may be made, as follows, in order that one may know when to wait:

(1) Tympanic Membrane red, but not showing a fluid line or bulge; hearing only moderately impaired. Wait.

(2) Tympanic membrane red and showing fluid line evidently of a serious character; hearing moderately diminished. Drum only slightly bulging. Low temperature curve. Moderate pain. Wait.

(3) Tympanic Membrane covered or distorted with small serious blisters or harmotomata; hearing moderately diminished; moderate pain; low temperature curve. Wait.

From this it is to be gathered that the problem of withholding myringotomy depends largely upon observation of symptoms and appearances, which may change in the course of twelve to twenty-four hours. Wherever this type of frequent observation is not to be carried out, as it can be done in hospitals devoted to this type of work, and where there seems to be evidence that the infection is growing, rather than diminishing in intensity, Myringotomy should be resorted to. During the acute stage of middle ear infection, whenever the drum is more than just slightly buling, Myringotomy is ordinarily indicated. It may be germaine to the subject to add here, that it is exceedingly good practice to always look at the unaffected ear first, as from the appearance of the unaffected tympanic membrane, one may get an excellent standard by which to judge the severity of the pathological picture presented on the other side.

Having decided upon Myringotomy, the next consideration is how to perform it in the most efficient manner, as regards discomfort to the patient and to secure greatest amount of drainage. Efficient myringotomy may be performed with the use of the Menthol-Phenol-Cocaine solution as a local anaesthetic in adults who are not nervous, and phlegmatic children. In the average child, while Myringotomy may be performed under local anaesthetic with the use of considerable amount of restraining force, the drum opening is very seldom made as large as is desirable, and if there is much struggle on the part of the patient, the opening made may be far from the desired location. Ordinarily too, the child will make every effort to resist a second paracentesis, which is often necessary and the clinician, while realizing that it is necessary, witholds Myringotomy because he knows that the incidental struggling and crying will probably make a good incision almost impossible, and at the same time make a very bad impression on the parents. Consequently a short general anaesthetic is always the method of choice in other than phlegmatic children and in the nervous adult, when a skilled anesthetist is available.

I well realize that in making this statement, I am advocating a method which ordinarily is only available to those whose work keeps them in close touch with a hospital where such service is to be had. I realize too that except in the hands of the most skilled all forms of short anaesthesia at present employed for children are attended by considerable danger. At the present time we are using Somnoform for our short anaesthetics for children, and while using it without the slightest difficulty in over five hundred cases, we still approach such anaesthesia with great caution. In adults the skillful use of a light nitrousoxide, oxygen anaesthesia is safe, efficient and humane. The tremendous advantage of working upon a quiet patient ordinarily makes a second Myringtotomy unnecessary, for if a wide incision is made the first time, it will usually suffice for drainage throughout the duration of convalescence.

The care of the acute ear, following Myringotomy, is the same as before, except the solutions used to douche the ear should either be made up from sterile water, or contain either boric acid or mercuric bichloride in weak solution. One measure of great service in shortening the period of recovery is rest in bed through the early stages of the infection, and this should be extended so long as there is a daily rise of temperature, excessive prostration, ear or head pain. Treatment of the nose and throat should be continued throughout the convalescence, the patient should be kept thoroughly alkalinized, and the bowels should move thoroughly daily. The post-auricular tissues should be examined for swelling and palpated for tenderness every day either by the physician, or if that is not practical, some member of the household,

and the drum should be dried off and inspected and there should be a clearing of drainage opening at least once in every three days. Every attack of head or ear pain, following spontaneous rupture of a Tympanic Membrane or Myringotomy, should be looked upon with suspicion as being due either to defective drainage or to the onset of the result of defective drainage, acute purulent mastoiditis. If a wide free Myringotomy has been performed, and the pain persist then the chances favor mastoid infection; if however there is any reasson to feel that the opening in the drum membrane could be improved, the Myringotomy should be promptly repeated.

So soon as there are grave suspicions that mastoid involvement is or has taken place, if it is at all practical, the patient should be moved to a hospital. Deep post-auricular tenderness and swelling in the presence of a homolateral acute middle ear infection is almost always indicative of pus in the mastoid cells. However, we must not be content to wait until so marked symptoms occur, as gross bone destruction has ordinarily resulted by that time. By careful observation of the case, and by utilizing all of our modern laboratory methods, it is often possible to arrive at an early conclusion as to what is going on in the mastoid cells and antrum. Study of the temperature chart and the recognition of significant head pains, and progressive deep bone tenderness, as well as total white and differential blood counts are measures of great value in diagnosis. In capable hands, however, the X Ray offers help of perhaps the greatest importance, as there is no doubt whatever that in cases, where there has not been some supervening chronic infection, which, by resulting in sclerosis of the bone and obliteration of the mastoid cells clouds the picture, fairly accurate estimate of the nature and the extent of the involvement of the mastoid process can be made.

It is not the purpose of this paper to discuss the proper methods of handling mastoid infections, but to consider it only as one of the serious and most common complications of acute middle ear infection. Furunculosis of the external auditory canal is a very common complication. Presistent dizziness supervening upon an acute middle ear infection should be the cause for grave concern, as it indicates irritation to or involvement of the labyrinthine structures, and when accompanied by sudden and complete loss of hearing, immediate operative intervention is ordinarily indicated, as the infection has quite probably extended into the internal ear. At the first signs of meningeal irritation, drainage of the middle ear through the mastoid cells should be considered. The onset of languor and drowsiness in a patient of ordinary alertness, in the presence of negative urine findings, is often an ominous sign of incipient meningeal or brain involvement, although at times the first intimation may come through the persistance of violent head pain.

Other complications are those incident to the focal infection which is present, although such complications occur with relative rarity. Aucte arthritis is perhaps the most common of these, and when occurring, is usually of great severity. We have had one case of semi-paralytic ileus following middle ear infection, which quickly recovered following mastoid drainage and turpentine enemas. Erysipelas some times occurs, and is a most distressing complication.

Any case showing profuse purulent discharge from the middle ear four to five weeks following the onset should be regarded as probably having pus in the mastoid antrum, and possibly in the mastoid cells. No ear should be allowed to discharge for longer than six weeks, without taking into consideration the fact that acute process is slipping into chronicity, and that some active vigorous step must be taken to ward this off. Every case of acute ear infection following recovery should have inquiry made into the state of the nose and throat, in order that such prophylactic steps as are necessary to make recurrance less likely, may be taken.

Our greatest progress in ear work has come along the line of the realization of the importance of preventive measures. The time to treat deafness is at the first sign that any such condition is threatening to develop. The time to treat chronic purulent otis media is when the acute ear is tending toward chronicity. If we are to struggle to cut down the incidence of that most distressing handicap, deafness, we must give more attention to the care of the nose and throat in childhood and to the therapeutic problems of acute middle ear infections.

COOPERATIVE FULL TIME COUNTY HEALTH DEPARTMENT*

By P. W. Covington.

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Recognizing the growing demand for more adequate health protection in many counties in the state, the General Assembly of 1918 enacted a law which extends to County Fiscal Courts the privilege of consolidating all existing Health Departments in the Counties into a Full Time County Health Department, and to levy a tax of one-half mill for the maintenance of same.

This law also permits two or more of the less populous counties to combine in the maintenance of a Full Time District Health Department.

For purpose of encouraging the growth of such departments the State Board of Health, in cooperation with the International Health Board of the Rockefeller Foundation, recently offered five thousand dollars annually to each of the first six counties whose Fiscal Court would create a Full Time County Health Department, and appropriate a like amount for the maintenance of same, with the understanding that the ten thousand dollars thus provided in each of six counties would be used in employing a physician, trained in public health work, as director of the department, five assistants, such as public health nurses, sanitary inspectors and carpenters, and providing an amount sufficient to defray their necessary traveling and contingent expenses.

In addition to this, the State Board of Health created a new Bureau—The Bureau of County Health Work, whose activities are solely devoted to supervising, directing and assisting in carrying out the health program of the counties cooperating in this manner.

As soon as this cooperative plan was made public, invitations were received from a number of counties to place the matter before their Fiscal Courts, and, within a few weeks, the following had made the necessary supplementary appropriation: Mason, Scott, Daviess, Muhlenberg, Boyd and Harlan. No further effort will be made to increase the number as it is hoped that by concentrating on these counties for a period of two years such measurable progress will be made as will create a desire among other counties for Full Time County Health Departments, and that the financial resources of the State Board of Health will, at that time, be such as to permit her to extend financial aid to a larger number.

*Read before the Kentucky State Medical Association.

The following activities are being conducted along intensive lines by each of the six Full Time County Health Departments:

Work In Rural, Or Unincorporated Communities

A sanitary survey is made of each rural community, or unincorporated neighborhood in the county: that is to say, the Director in charge, and his assistants, eventually visit each rural home. In the beginning, the communities first selected for the surveys are those which are promising the best cooperation. Before beginning the work in such communities, it has been found desirable to prepare a rough, diagramatic map of the community, on which is located the roads, streams and homes, opposite the symbols indicating the homes appears the name of the householder, so that the Director and his Assistants, by the use of this map, may go from house to house without any unnecessary loss of time, and know before entering the home the name of the head of the family, which has been found to be of some advantage. This map is usually prepared with the assistance of some one living in the neighborhood who knows the location of every home and their approximate distances apart. On visiting the homes, information is secured from the head of the family, or lady of the household, as to the preventible sickness that the occupants of the home may have suffered during the year previous to the visit: the number of days lost from their work as the result of the sickness: the number of days any of the children may have lost from school; the value of the time lost in dollars and cents, and the amount of money spent for medical attention, nursing and drugs—all of which is recorded on the Survey Sheets prepared for that purpose. Having secured this information, the per capita tax that the people of the community paid during the year previous for the privilege of suffering from preventible sickness will be known. Often this is considerable; whereas, by the expenditure of a smaller sum, a great deal of it may have been prevented. This information is secured for the purpose of pointing out to the people the importance, solely from a financial standpoint, of cooperating with the Health Department in putting into effect the prophylatic measures advocated.

On this visit to the home containers are left, one for each member of the household. Two or three days later they are collected and examined for hookworm and other intestinal parasites. Upon completion of the examination of each household, a letter is sent to the head of the family notifying him of the result. If any parasites are found the Director returns to the home to dispense the necessary

treatments, which are continued each week until further microscopic examinations show them to be free from infection.

Also, during this initial visit to the home an inspection is made of the premises, with particular reference as to the type of privy, character of water supply, and for any conditions that may be a menace to the health of the occupants of the home. Where such conditions are found, they are brought to the householder's attention and some practical suggestions are made for remedying them. As nearly all privies visited are found insanitary on first inspection, arrangements are made with the head of the family for carpenters and cement workers to visit the home, on a day which the householder agrees to have on hand the necessary material, for the purpose of constructing a Kentucky Sanitary Privy. A printed placard is tacked in the interior of the privy on first inspection, calling the householder's attention to the fact that it is dangerous to public health, and that a sanitary one should be provided. A list showing the material necessary for its construction is left at the home.

Examination of School Children

During the school year the children in attendance at the schools throughout the county are examined for physical defects, with particular attention to the condition of their teeth, eyes, nose, throat and ears, and for any other defects that may prove a handicap in their school work. The parents of those found defective are notified as to the conditions found. Every effort is made to have the defect properly remedied, pointing out to the parents by circular letters, and personal interviews the importance of taking the children to their family physician for this purpose.

Typhoid and Smallpox Immunization

At certain periods during the year, preferably during the summer months when the roads are good, the people in each community are given an opportunity to secure inoculations for typhoid and para-typhoid fever, and vaccination for smallpox, previously creating a desire for such protection through illustrated lectures, circular letters and personal contact with the people.

Control of Communicable Diseases

Physicians are encouraged to promptly report their cases of communicable diseases to the Health Department. Upon receipt of such reports, the nurse visits the home in which the sickness occurs for the purpose of instructing the members of the houshold as to the measures necessary to prevent others from contracting the disease. While in the home, the nurse is expected to exercise her skill in doing what may be necessary to make the patient more comfortable. This is done in cooperation with the attending physician.

A spot map is kept in the offices of the Health Department, showing the location of all communicable diseases, and charts showing their prevalence from month to month.

Quarantine

It is the function of the Health Department to quarantine contagious diseases. By a prompt and intelligent enforcement of the law requiring this epidemics will often be prevented and lives saved.

Venereal Disease Clinics

Several hours each week are devoted to conducting venereal disease clinics at which all indigent patients who may be referred to the clinic by their attending physician receive examination, medicine and treatment for these diseases. All medicines and supplies for same are furnished by the Venereal Disease Bureau of the State Board of Health.

Sanitary Ordinances

Such ordinances as may be thought necessary for the protection of the public's health are submitted to the Board of Aldermen of incorporated towns. When adopted it is the duty of the Health Department to properly enforce them.

Reports

Each Saturday afternoon a report is mailed by the directors of the Full Time County Health Departments to the Bureau of County Health Work, State Board of Health, showing the results accomplished during the week. Upon the receipt of this report, a Weekly Summary is prepared and mailed to the officials of the Counties having Full Time County Health Departments. On this report the activities of the Health Departments are given a numerical value. The value being in proportion to the relative importance of the activity. Thus the County Health Department are scored from week to week in such a way that the officials of the County may compare the activities of their Health Department, to its credit or discredit as the case may be, with that of the other Health Departments. This has the added advantage of not only keeping all constantly informed as to the accomplishments of each of the Departments, but acts as a stimulus for the departments to put forth their best effort.

At the end of each calendar year a narrative report describing the work in general is prepared and mailed to all concerned with the success of the Department.

Conclusion

The purpose of this paper is to inform you of the State Board of Health's policy of cooperating with Counties desiring Full Time Health Departments, and, briefly, of the general routine of work conducted in each of the

counties operating on this basis. It is hardly necessary, before this body of well-informed physicians, to take up any of your time in presenting obvious facts showing the need of such departments and the benefits to be derived where such measures are intelligently applied.

DISCUSSION

W. O. Bullock, Lexington: It is hardly necessary to discuss a paper of this kind. All we can do is to be grateful for the information that Dr. Covington has presented to us. I feel sure many of us—I know I was for one—were ignorant to some extent as to the full purpose in his efforts to aid counties. It looks to me, from the standpoint of being associated with a local health organization and administration, that it would be difficult to conceive of any more comprehensive plan to really aid the counties in their health work and to get at the bottom of the causes of disease in order to eliminate them. Many difficulties I know are going to beset the county health officers, because I am sure the more work they do and the better work they do, the worse will the work show up. They will get more cases of preventable diseases. What I mean to say is that the better work they do, the worse the record will appear. After that there should be a great deal of improvement in the communities from the result of the work. I know of no position of trust that requires greater patience and more capacity for administration and effort in getting along with people than to be an efficient health officer. It has been an ambition of my own that when I get to a point in my professional life that the strain of active surgery is too much, to take up the more important but less strenuous position of a county health officer.

Arthur T. McCormack, Louisville: Dr. Covington's paper presents to my mind one of the most important phases of medico-sociological work that is to be in the near future put before the American people, due to the education not only of the members of the profession themselves throughout all these years, but due to the education through them of the public, and also especially due to the revelations and information gained during the war, to the rapidly increasing physical examination of school children, and the examination of the employees of large corporations, in addition to the enormous stimulation which was received by nearly everybody as the result of the Red Cross activities during the war.

There is a demand on the part of the people for better health conditions that has never before existed. Everybody wants something done for them, and nearly everybody is willing to do a little something, if not asked to do too much.

There are a number of voluntary agencies that are anxious to respond to this cause. Every agency that was created during the war for altruistic purposes and succeeded in getting hold of enough money by free grace or private philanthropy is anxious to continue to do something that will enable their workers to continue to draw salaries, and such agencies are grasping at the public desire and are anxious to appease this unsatisfied appetite by filling positions, and one of the greatest dangers to the public health movement is a response by large numbers of untrained people who desire to rush into this field and give the people something under the name of public health. On the other hand, in our own profession we have passed through an era where the doctor practicing medicine for the maintenance of his family and to save probably enough for his old age was obliged to take from his life work the sacrifice of energy and income to make a part time health officer. Much good, in fact, everything has been accomplished in this and other states toward developing official public health activities by such self-sacrificing physicians. The time has arrived in many sections, and will soon arrive in every section, when these activities must be developed and directed by men who are devoting their entire time to this phase of work, who are especially trained, so that they can devote their time to it efficiently and effectively, and the people should realize it will cost money to get such services and the services of their trained assistants, and the thing that is a delight to those who have been in the work many years is that the public are ready to respond and open their pursestrings, provided when they have done so they get better results for the money expended. It has been a most delightful experience to have seen Dr. Covington go from county to county in this state and to have the fiscal authorities, with it united support of our profession and of the people of the county generally to make an appropriation of five thousand dollars. It was easy to get an appropriation of five thousand dollars in each instance to do this work. The people realize the need of it. The question is whether we have realized the necessity for giving them adequate returns for the expenditure of their money, and we must deliver the goods.

In Kentucky we have had all time health department work practically under this plan for the past four years in Mason county. At present they have there an all time health officer. In that county at the beginning, based on statistics that were then available and were accurately checked up by a preliminary survey made by the United States Public Health Service, the estimated cost of preventable diseases in loss of time, doctors, the bills of druggists, the loss from unnecessary deaths, that is, premature deaths, amounted to something over a million dollars a year, and at the end of four years the same estimate based on the same sort of figure show that the cost is reduced to less than two hundred

thousand dollars a year by an expenditure in the county of between eight thousand dollars and twelve thousand dollars each year. Mason County has much still to be desired and probably will have when the bell rings for the millenium, but it has made such great progress as compared with the other counties of Kentucky that there is no other county at present with one-half its population that has good health conditions as they have in Mason. They still have a polluted water supply from the Ohio River. As soon as that condition is remedied and typhoid fever from Maysville is eliminated, we will have a real showing as to the results that can be accomplished by a health department.

There is one other feature of an all time health department to which I desire to call attention. When I look over this audience I find every county in which there is an all time health department is represented by many of their doctor's presence. There were 661 members registered at this session, the largest ever held in the state, excepting one, and that meeting was held in Louisville. But at this session there are more than one representative from every county except one, that have an all time health department. It shows the counties that have such health departments, where the physicians themselves furnish the inspiration and become health officers, have a feeling of respect and higher regard for the profession. They see they are delivering the goods. They know they are doing better work. Think what it means to be rid of the ordinary diseases confronting most of us all the time—typhoid fever and diphtheria, and a lot of diseases on which we are wasting our time. It takes skill to prevent them, so that we should devote ourselves to the problems of health, examining the people that need treatment, instead of writing obituaries, so to speak, on the class of diseases to which we devote a large part of our time. The profession in these counties is improving. They are having better medical meetings, and they are more highly regarded by the citizens of this and other counties. One of the gratifying things has been, instead of decreasing the income of physicians, the physicians are better off. I do not think any other profession in their ability to sign checks is better off than the representatives of Mason County, and that is true, because the people of these counties have been taught that doctors are real scientists. They go to them for advice, and know they will get honest, high-grade treatment. They are educated in the schools as to the necessity of getting a doctor early when they are first taken sick. They are educated as to the necessity for operation. The time is coming rapidly when as we develop these health departments every county in this state will demand them, and since the last General Assembly made a liberal provision for state aid, and the aid is not given in any sense for supervision or management of the state health department, but simply for cooperation with the county department. We are ready to help at any time.

P. C. Layne, Ashland: Sanitary measures in cities and towns should be carried out as in training camps in order to control the spread of diseases. At Camp Harrison the stables, the latrines, etc., were carefully looked after from the standpoint of sanitation in order to keep down disease and keep the men in a healthy state. The health officer, or whoever has authority, should have the power of a general of a division, and when he issues an order to have a certain thing done, it should be done without any hesitation, and not put it off until tomorrow or next week. If an alley is to be cleaned out, it should be done forthwith and not put off as in some cases.

Boyd county is the smallest county in the state. We have there an active health officer who is a success in the business. He has been rounding up all the prostitutes in Ashland and thereabouts he can find. He has 17 now in the county jail. He is looking after all cases of contagion, infectious and communicable diseases, particularly the venereal diseases. He is cleaning out all houses of prostitution as fast as possible, and these women are fleeing from the city as from a pestilence. I think we are going to have a complete success.

We have two nurses. There is no reason why the people of Kentucky should not be educated along these lines. They need a physician to know how to handle milk and food and excreta, which is one of the most disagreeable things in mountain countries. We have a new water supply at Ashland which will be our main water supply. We have had a new waterworks in operation for two weeks. We are purifying the water by chlorinating it, but whether that will be successful or not, I do not know. All typhoid fever in Ashland comes, in all probability, from the water gotten out of the Ohio River. I am a little fearful whether Boyd county will put in a filtering system.

Leon Solomon, Louisville: I see in the paper as presented by Dr. Covington whom it is my pleasure to know personally, the fruition of the labors of the Doctors McCormack, that is, all time health officers. We are not in the habit of looking upon J. N. McCormack and Arthur T. McCormack as all time health officers, but rather as the Secretary of the State Board of Health and supervising manager of the Journal of the State Medical Association, and J. N. McCormack as supervisor of a department in the State Board of Health. Here we see a dream which has gone on until it has been actually realized and practical benefit comes to the state at large, and more directly through all time county health officers to the different counties of the state. What is there that can

possibly be conceived of that is more far reaching in its benefit than that Kentucky should have six all time health officers supervised by Dr. Covington, who has the general management thereof. Through this agency typhoid fever will cease to exist in the counties as it has ceased to exist in the city of Louisville.

As a teacher of the theory and practice of medicine, will you believe me when I say we must search about to find a case of typhoid fever to show to the students of medicine. Some of those who sit before me recall the days away back in 1890, 1893, 1894 and 1895 when we had typhoid fever everywhere, when the wards of the City Hospital, when I was an intern in 1904 for twelve months, in the year, was crowded with typhoid patients. Through the supervision of the milk supply, as made plain by Dr. Maguire, we have almost done away with typhoid fever, and a disease more important than typhoid fever and that is diseases of the gastointestinal tract in the infant.

Up to two or three years ago, when I was active in the practice of medicine, I saw only now and then a case of diarrhea or dysentery in infants. My fellow practitioners tell me they rarely if ever see such a case. Under the supervision of the department of venereal diseases just referred to in Ashland, the women with venereal diseases are rushing away from Ashland as from a pestilence, as indicated by the last speaker. This department of the State Board of Health inspired me to come to this meeting, and I hope I may have the time and inclination as I have already to devote some years of my life to the public weal and woe.

We are to have a paper on the subject of venereal diseases and their control, showing another department of the State Board of Health's activities.

I was greatly pleased to listen to this paper. I am proud to know that out of my efforts and those of others came the all time health officer. So it comes to pass that we, a faithful six hundred or more, come to these meetings to learn a thing we did not know in its entirety, that six counties in the state had marched up and voted the sum of five thousand dollars. So we learn how the State Board of Health spends its money freely given to it by the last General Assembly.

I had the privilege of supervising 25,000 dollars given by the National Government when the Bureau of Venereal Diseases was first installed. I never felt more keenly responsible in my life than in spending this rather large sum of money, and here the state comes forward and votes the sum of twenty-five thousand dollars which is for that purpose alone, as I understand it. It is an inspiration to come to these meetings and stay until the afternoon of the last day and hear what is going on. That is the end we all seek eventually as doctors, the realization of the time when the preventable diseases will cease to exist.

W. O. Bullock, Lexington: We have in Lexington a process of sewage purification that is probably one of the most perfect in the United States. It is the Imhoff or Emscher process. If any of the members of the association are interested in sewage purification and would like to pay a visit to this plant, I shall be glad to make arrangements for them to do so.

P. W. Covington (closing the discussion): We are all agreed that this is a step in the right direction, and one that will ultimately lead to the accomplishment of a great deal of good throughout the state. I do not believe the time is far off when the majority of counties in this state will have an efficient full-time health department. when the people will appreciate that such a defit to the people as any other department of the their government.

A Plastic Substitute for a Resected Stomach.—Hoffmann recalls that persons who have undergone total stomach resection are inconvenienced by the fact that they can eat only light meals and therefore have to eat frequently. To improve this condition he proposes an operation which he has performed thus far only on the cadaver and on animals. With a simple technic it provides a receptacle with twice the capacity of the small intestine. The escophagus is joined to the jejunum at a point where a long loop of the small intestine can be secured. Between the afferent and efferent legs of this jejunum loop a long anastomosis is established, which, beginning just below the tip of the loop sutured to the esophagus, throws the two legs into one cavity, the jejunum thus forming a receptacle 15 cm. long. The food passes from the esophagus through a short double-passaged portion of the intestine into the newly created reservoir. Also the secretions of the liver and the pancreas flow into this reservoir. It is advisable to carry out the enteroanastomosis before hte esophagus is united with the intestine, since a loop of intestine that is fixed in position is not so accessible. The circumference of the upper small intestine in man is from 4 to 6 cm. By the side-to-side suture of the two legs of the loop of the jejunum we obtain a reservoir with a circumference of from 5 to 9 cm. The time required for the anastomosis is so short that this secondary operation can be easily allowed to follow such an extensive intervention as total or subtotal gastric resection. In some instances it might be better to perform the secondary operation at a second sitting (under local anesthesia). The storage receptacle thus created is, to be sure, a very imperfect substitute for the stomach. However, it affords the patient an opportunity of eating much more at a meal. He gives an illustration of the technic.

INFECTION AND INFLAMMATION OF THE INVESTING TISSUES OF THE TEETH AND THEIR RELATION TO THE MAXILLARY SINUS.*

By G. B. Brown, Lexington.

A relationship too often overlooked by the average modern doctor is that of the pathological tooth root and the antrum of Highmore. We shall endeavor to discuss, first, the infection which takes place around the root and then show how this infection can involve the antrum, then how infection of the antrum can involve a normal root.

Just to refreshen ourselves on the anatomy of this investing tissue we must keep in mind several important structures:

(1) Peridental membrane, a system of inelastic fibres which suspend and hold the teeth in their sockets. The trans-septal fibres which hold the teeth together and by preventing spreading, keep food from becoming impacted, resulting in infection.

(2) Osteoblasts, which lay down bone around the ends of the fibers morticing them to the wall of the alveolus.

(3) Cementoblasts, which hold the fibers to the cementum of the teeth. The cementum is of interest because it has no blood supply and is not capable of self-repair. This repair must take place by means of the cementoblasts or cells from the peridental membrane. This can only take place under complete asepsis. When pus is present it becomes only dead tissue. Likewise the fibers which are attached die from infection and atrophy.

To repeat as a result of infection, the attachment of the fibers of the peridental membrane is severed. We have not only the pus soaked cementum which is incapable of repair, but also the actual disappearance of the fibers and bone into which they were inserted, and the loss of the cells which make such a repair possible. Replacing this loss is a mass of suppurating inflammatory tissue, not protected by epithelium by which toxins and bacteria find their way into the system and through which other bacteria of the mouth may readily pass.

Following the death of the pulp the infection passes through the apical foramen or foramina into the tissues immediately surrounding the apex. Thus we see that the most common infection of tissues immediately surrounding the teeth are pyorrhea and chronic alveolar abscess; both propagated by dead cementum, are the result of two factors. The first results from a gingivitis, the second follows the death of the tooth pulp.

*Read before the Fayette County Medical Society.

The first prerequisite then in the conservation of healthy teeth and their investing structure is the avoidance of gingivitis, which is caused by several faulty conditions, among which are salivary calculus and serumal calculus. Serumal calculus is due to (1), lack of contact of the teeth, (2) improper contact, (3) deviation from the normal smooth contour, (4) lack of cleanliness, (5) misuse of the tooth pick, rubber band or tooth brush, (6) overhanging margins of fillings, ill fitting crowns, etc.

Pyorrhea has its beginning in a gingivitis which may result from serumal calculus being deposited on the root of the tooth, which may in addition to cause just mentioned, result from a low grade infection. Pyorrhea is probably not due to any specific organism and if the gingivitis which precedes was taken in time, thousands of teeth could be saved from extraction. Many systemic disorders caused from absorption of bacteria through the blood and lymph streams with their arrest in distal parts of the body, where they set up other foci of infection, such as rheumatism, neuritis, arthritis, chronic valvular heart disease, chronic Bright's disease, ophthalmic diseases and particularly many infections of the maxillary sinus could be prevented.

Another point which should be considered here which many dentists seem to overlook is the constant suppuration in the gums with absorption and swallowing of bacterial by-products. I have seen many of these conditions which caused chronic inflamed tonsils, chronic pharyngitis, inflammation of the vocal cords, bronchitis and many different varieties of stomach trouble including chronic thickening and ulceration of the lining of the stomach and intestines.

Perhaps it would not be amiss here to just mention that many diseases may be carried from one mouth to another or one tooth to another by improperly sterilized instruments. Syphilis, Vincent's Angina, Trench mouth and extremely virulent and septic types of bacteria may be conveyed in this manner. There is indeed no excuse for the modern doctor or dentist for not boiling or thoroughly sterilizing instruments in this day and age.

Laboratory methods reveal much in focal infections. Of course the X-ray is the one we rely upon the most, but we will not discuss the diagnosis of apical infection by x-ray. There is another method that offers a material aid and perhaps may be of assistance where the x-ray could not help us, that is an increase in the white cells of the blood. There are several varieties of leucocytes and according to Daland of the University of Pennsylvania, who has made a study of one hundred cases

of infections of this nature, small cell lymphocytes play a much more important roll than the polymorphonuclear. His summary is as follows: (1) that an increase in small cell lymphocytes with corresponding decrease of the polynuclear variety, especially where the total white cell count is below normal, is an important sign of periapical dental infection. (2) Out of 100 cases only two cases of infection failed to show this increase. (3) This increase in the cells indicates toxines or streptococci, or both, are entering the blood stream. (4) The increase in cells disappears from five to eight weeks after removal of all focci of infection. (5) The organism that produces this increase is usually streptococcus hemlyticus or streptococcus viridans. (6) Chronic periapical infection usually show no pus.

After discussing the pathology and bacteriology of the adjacent tissues of the teeth, let us consider the anatomical relation of the teeth to the antrum of Highmore. As we all know there is great variation in all anatomical structures. This is particularly true with the relation of the alveolar processes of molars and premolars to the antrum. In some cases there is as much as one-half inch bone between the teeth apex and the antrum; in others there is only a very thin shell like bony partition separating the two. In still other cases the processes extend well up into the antrum and assume a honeycomb appearance, seen from within the antrum.

Infections of the tissues around the apex can travel to the antrum by two means, (1) direct extension by necrosis of the bone, (2) by the lymph and blood stream since the arterial supply of the maxilla and upper teeth come from the posterior alveolar artery, one branch going to the mucous membrane of the antrum, another to the spongy bone of the maxilla, a third to the covering of the alveolus and roots of the teeth. These vessels are so intimately connected by small branches or anastomosis, that they may be considered one system. Thus we can readily see that such things as devitalized nerves, gingivitis or pyorrhea, (due to such causes as we have just discussed), neglected caries of the teeth, osteitis of alveolar process, rupture of an infected dentigerous cyst, or certain systemic disorders such as syphilis, can very readily produce inflammation which will involve the antrum. One authority states that a devitalized tooth when a culture is made from the root, after some six months, will grow a toxic bacteria, readily absorbed but having no pus producing qualities.

Cases of infection of the antrum of Highmore, caused from teeth extraction, can be devided into three groups: (1) Dental roots lying within the antrum, which upon extraction leave a fistula and the infection enters from the mouth. This condition is comparatively rare and cannot be avoided. (2) The cases in which the root extends to and not through the periosteum and mucosa of the antrum. After extraction the soft tissue becomes infected and a probe inserted for diagnosis purposes accidentally penetrates the cavity of the antrum. This is a comparatively infrequent accident. (3) Cases in which the wall and lining of the antrum are penetrated by the extraction of the tooth. This may be due to the rocking movement used in the extraction or failure to extract all of the root and in attempting to place forceps, the root is pushed up into the antrum. This occurs to a greater extent when the soft tissue is not cut away from the tooth before extraction. All cases of perforated antrum do not become infected, but where food is forced through an open fistula an infection practically always follows. This condition will also tend to keep the sinus open and retard healing. When drains are inserted permanent fistula usually results; because edges of the wound become lined with epithelial tissue thus making a permanent opening, granulation tissue not being able to close the wound.

Here let me make a plea for the early closure of the sinus caused by tooth extraction. (1) The cilia lining the antrum wall tend to move infection and debris toward a normal opening in the nasal wall. (2) Any pus within the antrum will tend to drain to the lowest point thus keeping the wound infected constantly. In all these cases an opening should be made through the nose at the level of the floor of the antrum allowing drainage through the nose where food cannot be forced through and where the cilia tend to sweep the infection within the antrum wall. Also where free antiseptic irrigations can be used.

According to Lyons of the Mayo Clinic in an analysis of 100 cases, the average duration of infection with fistula was 349 days, the shortest was three days and the longest ten years. He reports that in all these cases 16% were treated by dentists and that the treatment in all was essentially wrong, since drains were inserted through the alveolar process, either gauze or rubber tubing, and curettment was performed frequently which only tend to prolong the healing. In acute cases the majority of antrum infections will clear up with the modified Krause window resection, that is making a sufficiently large opening of the sinus through the nostril near the floor of the antrum, using gentle suction and lavage. If the fissure does not close after this procedure, one of three measures is

available, (1) suture of the opening after excising the lining of the tract, (2) plastic operation, (3) use of a temporary denture if the tract is very small. These procedures should not be attempted until the antrum itself has been cleaned of infection. It must always be borne in mind that the edge of the wound must be stimulated by triming and removing any necrosed bone around the tract. The plastic operation is very radical and means transplantation of epithelium from the hard palate. The denture may be used in acute and subacute cases to keep the food particles out of the fistula, with no projection allowed in the fistula opening. It is attached to the teeth on either side.

In conclusion let us look at the infection from another standpoint, that is infections which attack the teeth secondary to an acute maxillary sinusitis. We will give a brief sumported by Glassburg of New York. Case (1) Patient age 40, complained of severe neuralgia pain over superior maxillary region and orbit of left side. Pain was acute and shooting in character and intermittant. Patient had not slept for three nights, very restless during the day and continually applying hot poultices. Her dentist found nothing wrong with the teeth, referred her for examination of sinuses. Examination disclosed increased redness, the mucous membrane of the nostril on affected side, thickened mucous membrane no other abnormality. The patient was placed on the customary treatment and an x-ray showed definite shadow over the antrum but no disease of teeth on this side. The antrum was penetrated and foul smelling pus was washed out. She did not return until a month later when her symptoms were similar but milder in character. Examination revealed same condition of nose at this time, tenderness was elicited over second bicuspid, x-ray showed abscess at the root of tooth. Tooth was extracted and patient made an uneventful recovery.

Case (2) Man age 28 refered with diagnosis of sinusitis complained of headache, worse on stooping, coughing or any jarring. Pain was over the whole forehead, particularly severe over left eye and left cheek bone with history of headaches, nasal obstruction and susceptibility to colds. This attack was of four days duration. Teeth showed no caries septum deviated to left, thickened membrane, polypoid middle turbinate on left. There was a thick secretion in left nostril. Maxillary sinus was punctured, irrigated and pus evacuated and relief was almost instantaneous. X-ray was negative as far as teeth were concerned, but showed shadows over left frontal, left ethmoid and left maxillary sinuses. After three months patient returned and at this time examinaion of the teeth disclosed apical abscess of the first molar which was not there previously. Antrum was punctured irrigated and other nasal surgery performed at this time. Sinusitis cleared up and the patient was refered to his dentist for dental infection.

Case (3) Man age 32 complaining of throbbing pain over right side of face, temperature 101F. Pain radiated over cheek, teeth and to his ears and neck. Trouble began three daays before. Believing it was tooth ache he went to his dentist who removed a bridge, but found no focus of infection in teeth and pronounced teeth in good healthy condition. Patient was subject to frequent colds in head and had been told he had an infected antrum, but so mild he did not have an operation performed. Nasal examination showed thickening of mucous lining, no secretion. Antrum was opened, pus evacuated, treated for two weeks. He did not appear for six months when he came in great distress. The nose picture was the same, the teeth were examined and tenderness was elicted over the second bicuspid and first molar. Irrigation of the antrum showed pus. Free drainage was established, patient was referred to his dentist who at this time reported abscess of both bicuspid and molar teeth. The maxillary sinusitis was cleared up through the nose.

It will be noticed that in all these cases patients had sound teeth when they first appeared. Pus was obtained from the antrum of each case. Each neglected the proper treatment of the antrum and had a recurrence of the infection, at which time a recently developed dental infection was discovered.

In view of the anatomic relationship of the antrum of Highmore and the teeth involved, it is reasonable and logical to conclude that dental infection was due to the pus finding its way from the antrum to the teeth and makes one believe that if proper attention had been given to the sinusitis at the right time these teeth in all probability would have been saved.

Precancerous Condition of Cervix of Uterus.—Huggins insists that every woman who has borne children and who has reached the age of 40 should be examined and if disease of the cervix is found it should be treated. This treatment may be palliative but often it should consist in the removal of the diseased tissue. While a cervix may present but slight evidence of disease, this may be sufficient in the presence of susceptibility and an acid medium to cause cancer. It is important that every practitioner acquaint himself with what a normal cervix is, so that he may appreciate the deviations from the normal and cure the cancer before it starts.

WHAT THE FAMILY PHYSICIAN SHOULD KNOW ABOUT SYPHILIS*

By C. J. Broeman, Cincinnati.

In these days of specialization the family physician is seeing one after another of his former functions given over to those whose whole training and attention have been centered upon the study of some particular branch of medicine. No longer like the doctor of Mr. Dooley's young days does he tackle anything from pneumony in the lungs to permachure baldness. Truly such a doctor would today be regarded as "loonatical as the' mos' Christyan Scientist that iver rayjooced a swelling over a long distance tillyphone." The conviction that the best interests of his patients demand the services of specialists every day gains favor with the average medical man, until it would seem that before long the "tentative diagnosis" will be the only procedure left for the family doctor.

This attitude, particularly in evidence among general practitioners in large centers of population where special consultants are close at hand, has resulted in many physicians becoming careless in regard to the treatment of conditions which are often put into the hands of specialists, and letting themselves fall behind the march of improvement in therapeutics and clinical technique. The treatment of syphilis is a case in point. The new methods require knowledge of laboratory procedure, and a considerable degree of technical skill, but it is none the less imperative that the general practitioner should equip himself to look after his own patients, if the need arises, and he should also keep himself informed of every advance made in the study of the etiology and treatment of syphilis.

If venereal diseases are ever controlled, the general practitioner will be largely responsible for it. Not only is he the chief missionary in the spread of the gospel of prevention, but usually he is also "first aid to the injured."

Upon him falls the responsibility of early diagnosis, and the prompt institution of vigorous treatment whether administered by himself or someone else.

The importance of early diagnosis is too well understood to need emphasis here. Every medical man should strive to recognize syphilis before it has developed sufficiently to give a positive serum reaction. To wait for a "positive Wassermann" is to lose valuable time. Every sore on the genitals or anywhere else—that offers even the slightest suspicion of chancre, should be repeatedly searched for spirochetes. Never ignore any excoriation, herpetic or otherwise, or any crack, nodule or papule, even if it does not flaunt the typical clinical manifestations of a syphilitic lesion. Examine minutely any ulcer about the genitals; let it make no difference how well the patient is able to account for its presence on other than syphilitic grounds.

No chancroid is free from the suspicion of syphilis. Double infections are by no means uncommon, and the alert medical man will not fail to search for *Treponema pallidum*. Even if nothing is found under the microscope a weekly Wassermann for three or four weeks should be made to avoid all chance of an infection being overlooked. In this connection it is essential to keep in mind the fact that antiseptics, and mercurials especially, make the detection of *Treponema pallidum* very much more difficult, if not altogether impossible. Therefore a suspicious lesion should have no antiseptic dressings applied to it until the microscopical examination has been made. Should this have been done before suspicion was aroused, the lesion should be well washed with physiologic salt solution, and be covered with a dressing wet with the solution for at least half a day before the specimen is removed for examination.

The *Treponema pallidum* is always present in the primary syphilitic lesion, in the condyloma or mucous patch; its presence is demonstrated with less ease in the secondary eruptions, and only with difficulty in the gumma. But at present there is no lesion due to syphilis in which it has not been found, Noguchi having even discovered it in the brains of those suffering from general paralysis of the insane.

There are several ways by which one can obtain material for examination. Wipe off the suspected lesion with salt solution or soap and water, cleansing it carefully. It should then be rubbed briskly, or if this is not sufficient, slightly abraided. What we are after is a clear oozing surface, without blood. The lesion should then be gently squeezed or a little alcohol can be applied. The alcohol causes smarting and stimulates the outflow of lymph from the deep tissues. Squeezing brings about the same result, but may be more unpleasant for the patient. The oozing serum is placed on a slide covered with an ordinary cover, and examined with a dark field.

Another method, adapted to the prominent nodes found in the satellite adenopathy often accompanying the initial lesion, is glandular aspiration; it can also be readily done upon the indurated base of a suspected chancre. Use an ordinary hypodermic needle, at least an inch long, fastened to a sterile glass syringe, holding about a cubic centimetre. Paint the skin over the gland with iodine, palpate the

*Read before the Scott County Medical Society.

gland, and grasp it between the left thumb and forefinger. When the needle is plunged through the skin, the movement of the gland under the finger will indicate that the capsule has been penetrated. The gland must then be held firmly while the tissue around its point of entrance is slightly macerated by the needle. A drop or two of fluid can now be aspirated into the syringe, and will usually be found swarming with *Treponemata pallida.*

The morphology of this organism is easily recognized by the specially trained observer. For the novice it is, of course, much more difficult. Its average length is about double that of a red-blood-cell, and it is spiral shaped, having from ten to twenty turns which are clear-cut and well-retained even when at rest. Its movements are most often rotating and in the direction of the long axis, and are slow—this slow movement often serving to distinguish the organism from other similar forms.

If the lesion has been carefully cleansed there should be no *Spirocheta refringens* present, but our spirochete can be distinguished from it, because the turns of *Spirocheta refringens* are more irregular and not so numerous, and it is noticeably more coarse in form; neither does *Spirocheta refringens* keeps its corkscrew shape so well when at rest; and it moves about much faster. Sometimes an inexperienced observer will mistake a fibrin spiral for the spirochete of syphilis. If trained laboratory workers are easily available, it will be wiser for the general practitioner to have this work done for him, but it is not beyond his power if he cannot get help.

Failure to find the *Treponema pallidum* does not invariably exclude the presence of syphilis, and in no way obviates the necessity of doing the Wassermann. But as the Wassermann does not usually give a positive reaction until a couple of weeks after the initial lesion appears, if the presence of spirochetes can be demonstrated earlier, treatment may be instituted just that much sooner. In no case should the treatment be started unless a positive diagnosis can be made.

The first evidence of syphilis is usually the chancre and the enlargement of the satellite glands. The incubation period varies from ten to ninety days. It is obvious that a complete history upon this point is a great aid to correct diagnosis. If the patient is a man the chancre will usually be found in the coronary sulcus, most often close to the frenum, though it may be upon the glans, the prepuce, the body of the penis, or even in the urethra. This last location may lead to a mistaken diagnosis of gonorrhea. In women the most common locations are upon the labia and fourchette, though they have also been observed in the urinary meatus, upon the cervix, and rarely, in the vagina.

The chancre begins as a round excoriation, of a dull red color, usually even with the surrounding surface. As it slowly increases in size the edge and base become distinctly indurated, until it develops a smooth surface exuding a small quantity of serum, without forming granulations.

Sometimes the chancre appears in the form of a dry papule most often found upon the prepuce or the glans. This type is not often indurated and gives off no secretion, involving only the superficial tissues. There are a number of other forms but they are not readily differentiated, and it must always be borne in mind that these lesions are often so insignificant and are—apparently—short-lived that they may entirely escape the attention of the patient.

Having established the diagnosis, treatment should be initiated without further loss of time and pushed to the limit of tolerance. There should first be a very thorough inspection of the patient's physicial condition. If there is any concurrent affection in the lungs, kidneys or vascular system, the administration of arsphenamine must be carried on with great caution. The urine should be analyzed before each injection, and the general condition closely watched at all times. It is generally agreed that the best result will be obtained by a combination of arsphenamine and mercury, rather than placing reliance on either agent used alone.

So many fraudulent preparations of arsphenamine or neo-arsphenamine have been placed on the market that care must be taken to be sure one is using a reliable product. Use it immediately after it is prepared. Never have the druggist "mix it up" for and "send it around right away." No more than fifteen minutes should ever be allowed to elapse between the preparation of the dose and its administration to the patient. All compounds with a large percentage of arsenic undergo rapid transformation upon exposure to air.

Rigid asepsis is absolutely essential; if its attainment is impossible the injection had better be postponed. Boil everything to be used in distilled water for at least twenty minutes, and use freshly distilled water in preparing the solution. Follow the directions accompanying the tube very carefully. Neo-arsphenamine or silver salvarsan can be given in concentrated solutions intravenously in a large glass syringe. Personally I prefer the gravity method of giving any form of salvarsan.

The body weight of your patient is the best

guide for dosage. The maximum dose for adults is figured on an average weight of one hundred and fifty pounds for a full-grown man. For smaller patients it must be proportionately decreased; and for women the dose should always be one size less than for a man of the same weight.

The technique of intravenous injection is not at all difficult, and every general practitioner should be willing to take the trouble to acquire it. The patient should lie down, and the arm veins may be distended by using a tourniquet about the arm. Iodine is a good preparation for sterilizing the skin at the point of puncture, but it should be wiped off with alcohol to prevent its obscuring the field. If the patient is hard to manage local anesthesia may be employed.

I always use a platinum needle, gauge 20 or 18. The advantages are many. It can be boiled forever; never rusts; lumen does not corrode or roughen; does not become stuffed so readily; enters vein more easily; and is not so apt to tear the lumen of the vein because its surface is always smooth.

The simpler the method is, the better it works. I use a graduated cylinder attached to a rubber tube with an ordinary clamp and a small piece of glass tube for window. The window is placed about four or five inches from the needle. Attach the cylinder to any ordinary irrigation apparatus where it can be lowered and raised readily. Fill the cylinder with sterile water, at the level of the arm. See that no air is in the tube. Put a heavy rubber band on the patient's forearm. Slip the tube through the band allowing the band to rest on the glass window. This will not constrict the tubing and will hold it in place. The purpose of the rubber band is to do away with the tiresome and unnecessary duty of holding the needle while the arsphenamine is entering the vein. Connect the platinum needle, let a little water run; put the tourniquet on, enter the vein, open the clamp; the blood should now show in the window. Release the tourniquet, raise the cylinder about two or three feet. If sterile water flows freely pour in arsphenamine. If water does not flow freely try another vein. Just before the arsphenamine has left the cylinder add enough sterile water to wash out the tube. Clamp the tube, extract the needle quickly, hold a piece of cotton on the punctured vein for a minute or two and, if it continues to bleed, touch the bleeding point with tincture of iron. No bandage or adhesive is necessary.

This method does away with untidiness of letting the blood flow on the arm, a sight which makes some patients sick and avoids soiling the operator's hands, the tubing, floor, etc. The patient should be instructed to mention any "burning sensation," as this indicates that some of the solution has escaped into the subcutaneous tissues. Such infiltration usually sets up inflammation, which should be treated by an icebag and moist dressing until it subsides.

It is best to give the injections to a fasting patient. Let him eat a light breakfast and go without lunch, receiving the injection in the early afternoon. If possible he should go to bed for the rest of the day—at least remain very quiet. The taking of sodium bicarbonate, 1-2 dram three times a day, for a few days before the injection and a mild cathartic the night before tends to lessen the reaction in some cases.

Authorities differ as to how the initial lesion of syphilis is best handled. Excision has been widely recommended, and, if this is done, the excised tissue should be turned in for laboratory examination. Cutting out the chancre, however, does not abort the syphilitic infection, and, as long as the physician in attendance is looking for spirochetes, he had best do no more to the chancre than wash it with saline solution and cover it with a wet compress. After the spirochetes have been found a thirty-three per cent calomel ointment or emplastrum hydrargyri mollis may be applied to the chancre a couple of times each day for the space of a week. Personally I think the less vigorous the local treatment the chancre receives the sooner it will heal. Give arsphenamine and if the lesion is an uncomplicated one it will heal in a week or ten days.

TREATMENT OF SYPHILIS

The earlier the disease is treated the sooner the patient will be cured and the less treatment will be necessary.

First Year—Course I.

First and second month. Arsphenamine dose 0.5. Neo-arsphenamine 0.9 intravenously once a week for eight weeks. Injections of salicylate of mercury or grey oil once a week for eight weeks. This is one course.

Third month. Rest one month from all treatment. At the end of month do a blood test—if negative—

Course II.

Fourth and fifth month. Same as Course 1, only arsphenamine once every two weeks. If positive or if symptoms are present, repeat course 1.

Six month. Rest. End of month, blood test.

Course III.

Seventh and eighth month. If negative repeat same as course 2 when negative. If pos-

itive, or if symptoms have appeared same as course 1.

Ninth month. Rest, blood test.

Course IV.

Tenth and eleventh month, whether serum reaction is positive or negative, course 2 should be used.

Twelfth month. Blood test at end of month. Whether Wassermann test is positive or negative, no mercury or arsphenamine should be given during a period of one month.

Second Year—Course I.

First and third month. If patient's serum is still positive or he has symptoms, injections of salicylate of mercury or grey oil once a week, for three months. One arsphenamine every two weeks. If Wassermann is negative one course of twelve injections of mercury.

Fourth and fifth month. Two months without treatment. At the end of two months make blood test.

Course II.

Sixth and seventh and eighth months. If Wassermann test is positive or symptoms have returned while under treatment, same as Course 1 of second year. If Wassermann is negative, no treatment.

Ninth month. If Wassermann is positive or symptoms have returned third course same as course 1 of second year. If negative give ten injections of mercury. Potassium iodine should be given once a month for three months of the second year, if Wassermann test is positive. If negative one month of potassium iodine is sufficient.

Third Year.

If Wassermann is positive, or symptoms have returned same as treatment for second year. If Wassermann test is negative give one course of twelve injections of mercury. After the third year the blood should be examined at least once or twice a year.

Potassium iodide should be given during the third year, for one month at a time, during two rest periods.

Fourth Year.

If after the third year's treatment the patient still has a positive Wassermann and has had no symptoms we should treat him same as in the third year, but do not give more than one arsphenamine injection per month. If symptoms occur treat same as third year If Wassermann is negative one course of twelve injections of mercury.

Give potassium iodide one month of every rest period of two months. If after the third year the patient's serum is negative to the Wassermann test discontinue all treatment.

The mercurial injections mentioned under course 1 should be begun with the arsphenamine treatment or soon after. Mercurial rubs are advised only when the deep injections for some reason or other are impossible to take. Half a dram can be used twice a week for eight weeks. After this time the patient should rest for a month. Rubs take the place of deep injections and a course of treatment occupies about the same length of time.

Rules for the Deep Injections of Mercury. The patient stands with the gluteal muscles relaxed, a sort of "at rest" position. Why some physicians have the gluteal muscles contracted at the time of injection, I cannot understand, since a tense contracted muscle is apt to break the needle.

For grey-oil use an ordinary 25 m. graduated glass barrel, leather-plunger syringe. I have given over 20,000 injections of mercury and I have never found it necessary to draw the plunger back to see if a blood vessel had been penetrated.

In some cases the soluble salts can be used for immediate effect, but for routine treatment the insoluble are better. If infiltrates or nodules of any size put in an appearance while the injections are being used it indicates either that the patient has an unskilful medical man, or else that this treatment is not adapted to his case. If the formation of these nodules cannot be avoided, the treatment must be suspended until they disappear.

The same watch must be kept on the kidneys during mercury administration that was recommended in the case of patients taking arsphenamine. If albumin or casts appear in the urine, the mercury must be stopped. The physician should also keep an eye on the condition of the patient's mouth. A good dentrifice should be used regularly, and in addition it is well to recommend the routine employment of an oxidizing mouth-wash, such as one-half saturated potassium chlorate solution, or a dilute solution of hydrogen peroxide. If salivation should occur, such a mouth wash must be used at short intervals. I have used calcium sulphide in quite a number of cases of syphilis where salivation was present, with a remarkably quick result. If the patient is in very bad condition the calcium sulphide should be given intravenously, one grain to one ounce of distilled water. Seven grains should be given at one dose. The calcium sulphide solution must always be prepared fresh and filtered after boiling.

Silver salvarsan. I have used for about six months in special cases in which the patient has not responded to either arsphenamine or neo-arsphenamine, or for some unexplainable reason can no longer tolerate the drug. The latter condition is by no means infrequent.

Silver salvarsan is prepared and given in the same way as neo-salvarsan. Of late silver

salvarsan has been giving me such good results that I am beginning to use it in more of my cases, though I have not had enough experience to form any definite conclusion as to its efficiency as compared with that of similar arsenical preparations. I find that it differs from the other arsphenamine preparations in the following ways: First. It is absolutely odorless. This is an important factor with a great number of patients especially those who have had a number of injections of arsphenamine and neo-arsphenamine. The odor becomes intolerable and some patients say it makes them nauseated as soon as the solution gets into the circulation. The odor is due to the exhalation of the drug. (A little perfume on cotton is of value in overcoming this.) Second. Table reactions are rare.

Third. The reaction occurring in from three to six hours is less and sometimes entirely absent, when silver-salvarsan is used.

In one case in which I had used the same vein a number of times for the intravenous injection of silver-salvarsan the patient developed phlebitis and a resultant hardening of the vein. This patient had had numerous previous injections of arsphenamine and neo-asphenamine without any hardening of the vein.

It has already been pointed out that the Wassermann reaction does not ordinarily become positive until nearly two weeks after the initial chancre appears. When it has once become positive we must not attach any great importance to a single subsequent reaction. Unless the reaction consistently remains negative, after four or five monthly tests have been made we are not justified in considering the disease successfully aborted. Even in conjunction with the complete disappearance of all clinical symptoms a negative reaction may not mean complete cure. No physician should give a syphilitic patient a clean bill of health until he has been without symptoms and his serum has given a steady negative reaction for at least a year, and two or even four years is now generally considered none too long a time to withhold the final verdict.

Throughout the treatment a watchful eye must be kept upon the patient's general health. Do not let your zeal to exterminate the *Treponema pallidum* lead you to push the treatment so far that there is any danger of "exterminating" the patient himself.

Some of the greatest authorities on syphilis are very doubtful about the possibilities of absolute and entire cure, even when treatment is instituted very promptly after the original infection. It is certain that the chances of eliminating the disease are very much less if the physician does not see it until the secondary stage has been reached. It is therefore, doubly unfortunate that the general practitioner is so often able to diagnose syphilis only when it has reached the florid stage.

All Caucasian cases developing an eruption show a macular syphilide; but it may be transient and is often masked only with negroes it is usually masked and very hard to detect. As a rule, the eruption predominates upon the body and limbs and spares the face; also the palms and soles. The lesions vary considerably in size, are flat and roughly oval in shape, and of a pale pink color. Pityriasis rosea is often mistaken for syphilis, and it is a fact that this condition frequently occurs in syphilitic subjects. Genito-urinary specialists and serologists very frequently make this mistake. Not long ago the author had such a patient referred to him, a positive diagnosis of syphilis having been made by the serologist who had obtained a persistently negative Wassermann reaction from the patient's serum. The differential diagnosis is simple enough for the dermatologist, but may well offer some obscurity to the general practitioner. Therefore the family physician must be very thorough in obtaining the patient's history.

Acute seborrhoic dermatitis may also deceive the general practitioner. It must be remembered that the lesions here are scaly and bright-colored, and some at least, will be larger than those of syphilis. The patient usually reports them as first appearing in the axillae and groin, or upon the midline of chest and back. There will be marked itching, while the lesions of syphilis rarely cause discomfort in this way. No constitutional nor clinical signs of syphilis will accompany seborrheic dermatitis. Drug rashes are of a much brighter color than luetic eruptions, and the history will be able to clear up any confusion in diagnosis. A patient who has taken copaiba, or perhaps cubebs for treatment of gonorrhea, has often been adjudged infected with syphilis, because of a subsequent drug rash.

Scabies must be diagnosed from the primary lesion as well as from the secondary roseola. Psoriasis is quite often mistaken for syphilis, especially in the late secondary skin manifestation.

The moist patches of *condylomata lata* are often the last of the secondary manifestations of syphilis to appear, sometimes years after the initial lesion. In general "the unwashed" are more prone to have them, negro women being especially subject to them. Sometimes seen beneath the breast, they occur most frequently around the anus, on the vulva, and in the perineum, or more rarely upon the mons veneris or scrotum. The edges are sharp-

ly defined, rising at right angles from the skin, and the flat top has a glistening necrotic membrane. Sometimes instead of a moist papule, the lesion will be hypertrophic. The ordinary venereal warts are often called "condyloma" but this designation properly belongs only to true syphilitic lesions. While they may bear a pathological resemblance to the ordinary papular syphilides, on careful observation condyloma will show a greater epidermal development much deeper and broader. Typical ones cannot be confused with anything else, and if some, not quite true to type, bear a superficial resemblance to venereal warts, enough are usually present in a given case, to make diagnosis very easy. Laboratory assistance may have to be invoked in very doubtful cases.

Congenital syphilis is at times most difficult to diagnosis. The Wassermann test is not always reliable. A Wassermann of both father and mother may help. Since the early manifestation of congenital syphilis are not so common as formerly (due to arsphenamine treatment of parents, etc.) it is quite often necessary to call in a dermatologist to make the diagnosis.

Nursing babies with syphilis are best treated by giving the mother intravenous injections of neo-arsphenamine so that the child receives the drug through the maternal milk. Small mercurial injections may at the same time be used on the baby. (10 grains of 50 per cent mercurial ointment.)

Where the child is not nursing, small intramuscular injections of arsphenamine or neo-arsphenamine in sterilized oil may be injected into the buttocks. About 0.03 gms. can be given for each ten pounds of weight and repeated at intervals of two weeks, until six doses are given. Mercurial rubs should be simultaneously employed. After an interval of two months the course can be repeated.

Older children with congenital syphilis should be given neo-arsphenamine and deep intra-muscular injection of mercury. The syrup of iodide of iron is useful as an adjunct.

The treatment of syphilis in the aged must be undertaken with more caution than in younger patients and it will soon be found that the same amount of treatment as in the young will not be well tolerated.

The "provocative Wassermann"—that is an injection of arsphenamine or neo-arsphenamine followed in twenty-four hours by a blood examination is indicated in cases where we wish to discontinue treatment or are anxious to determine if the the patient is cured. By this method in a certain number of cases we are able to obtain faintly positive reactions when those obtained by the regular method would be negative.

Syphilis is now better understood, and more under control of the physician than ever before. It rests with him to recognize the earliest manifestations of the disease and to attack it promptly with the efficient weapons modern science had forged for his hand. This is the road everyone must follow who seeks the solution of the "venereal disease problem."

Syphilis at best is a difficult disease to cure and in a general way, its curability is directly proportionate to the earliness and the vigor of treatment. In primary syphilis the most rapid curative results are obtained before the Wassermann test is positive.

In such cases the diagnosis should be based upon the finding of the spirochaetes under the dark-field meiroscope, or on a typical chancre (if this has been present for two weeks) with enlarged regional lymph nodes, general adenopathy, perhaps a roseola, etc. In other words, if it is clinically a positive chancre.

A negative Wassermann after a brief course of treatment should be disregarded, and should not serve as an index for the discontinuance of treatment.

If we ever expect to cure syphilis, we must treat our syphilities when their serum reactions are negative. An early negative Wassermann is gratifying, but do not let it influence you in suspending treatment. Three years is the time limit in such cases and more if the reactions are still positive. Late cerebro-spinal manifestations are prevented by early, regular, energetic, and systematic treatment.

The time to cure syphilis is in the primary stage. Two months of energetic treatment then is worth two years of treatment later.

Then if possible treat all syphilitics both intravenously and intramuscularly.

Syphilities who receive too much mercury become anemic. If this occurs stop the mercury and give iron injections.

Many cases of optic neuritis are found in patients whose serum gives negatives Wassermanns but who are known to be syphilitic.

Treat the patient as well as the disease. Don't cure the patient of his syphilis, and kill him with the treatment.

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SUMMER DIARRHOEA *

By James W. Bruce, Louisville

With the onset of hot weather, we look forward with more or less apprehension to the season of Summer diarrhoea among children. This is a broad term and carelessly used to cover a variety of conditions characterized by loose bowels, occuring most commonly in summer time. For practical purposes these conditions can be roughly divided into:

1. Those caused by infection of the intestinal contents.
2. Those caused by infection of the intestinal wall.

I will take these conditions one at a time, for their symptoms and treatment are quite different, and endeavor to present as clear a picture of each as possible, laying particular emphasis on treatment.

1. Diarrhoea caused by infection of the intestinal contents or fermentative diarrhoea.

Infection of the intestinal contents may gain entrance through contaminated food such as milk, fruit, etc. This is probably the commonest way. On the other hand, perfectly clean wholesome food may cause indigestion because the digestive juices are temporarily not functioning properly. This partly digested food passes down into the lower bowel where it becomes infected with bacteria normally there and starts up a fermentative process which produces diarrhoea. This is apt to occur in children whose resistance is low, due to excessively hot weather, too warm clothing, or parenteral disease such as pneumonia, otitis media etc., and is the reason why we must feed children lightly under these conditions. Also the same situation arises when the healthy child is overfed, particularly with sugar or carbohydrate food. The intestinal juices cannot take care of and digest it properly, so it becomes infected with bacteria and undergoes fermentation.

This fermentative process nearly always involves carbohydrates, sometimes fats. Acids are produced such as acetic, formic, butyric etc., which irritate the mucous membrane causing it to throw off large quantities of mucus and stimulate the intestine to increased peristalsis. The mucous membrane is rarely injured sufficiently to cause actual bleeding, so that bloody stools almost never occur.

The diagnosis of fermentative diarrhoea is made by the character of the stools. They are watery, green or greenish-yellow, acid in reaction so that they scald the buttocks, 5 to 30 in number in 24 hours, and contain a great deal of mucus, but no blood or pus.

The course of the disease is sometimes terrible in its rapidity. I have seen a child go from apparent perfect health to its death in 24 hours. The usual duration is 1-3 weeks. Fever does not last more than 2-3 days except in severe cases.

Treatment—There are two objects in treatment: 1. To check diarrhoea. 2. To prevent water loss.

1. Since the diarrhoea is due to fermentation of carbohydrates, we must remove carbohydrates from the diet. By so doing we cut off the food supply of the fermenting bacteria. But we can do more than this. We know that putrefaction of protein and fermentation of carbohydrate are antagonistic processes; the bacteria that putrify and those that ferment do not get along well together. There is constant battle between them. Putrefaction produces alkaline stools and constipation. Carbohydrates produces acid stools and diarrhoea. Therefore in fermentative diarrhoea, why not feed protein and thus encourage putrefying organisms to live and kill out the fermenting bacteria? This is the logical line of treatment and gives better results than any other. Protein can be obtained on the market in the form of powdered calcium-caseinate e.g. "Casec" made by Meade-Johnson, "Larosan" made by Hoffman, La Roche, or "Protolac" made by the Dry Milk Co. These are all soluble tasteless powders put up in 1-3 or 2-3 oz. packages and will dissolve readily in milk mixtures. By means of them we can increase the protein percentage far above the carbohydrate content and so encourage putrefaction at the expense of fermentation. This is the simplist way of making albumin or protein milk. We can also buy albumin milk already made in powder form and results with this product are very satisfactory.

The feeding for a typical case of fermentative diarrhoea would be as follows: After the initial cathartic, give no food for 24 hours, but urge the child to drink as much weak barley water, weak tea, or plain water as possible. Then begin with 1-3 skim milk and 2-3 water with enough powdered casein added to make 3 per cent or over, boil 5 minutes, and feed every 3-4 hours. Gradually increase the strength of the milk as the stools become yellow, finally dropping out protein and adding sugar in its place. Sugar must be added very slowly watching the stools carefully or fermentation will be started again and the whole procedure repeated.

Treatment of water loss. The loss of fluid in these cases is tremendous. If the stools in a severe case are weighed, they often amount to several pounds in 24 hours. Most of this weight is water. Loss of water is responsible for the drawn

*Read before the Nelson County Medical Society.

pinched look that comes after one or two days. The skin becomes dry and leathery and stands in little folds when picked up between the fingers. This is a danger signal. This water must be replaced quickly or the child will die of acidosis. Acidosis in these cases is due to two factors. First, there is accumulation of acid products in the system due to the fact that there is no water to carry them off into the urine, for these patients sometimes do not pass urine for 24 hours. Second, there is derangement of fat metabolism due to carbohydrate starvation just as you see in diabetes resulting in formation of acetone, diacetic acid etc. These acid products are dangerous to life and must be combated quickly. Most children that die of diarrhoea die of acidosis.

There are two ways to fight acidosis; with alkalies and with sugar. Neither one by itself is effective, they must be used together. Soda can be given by mouth and intravenously. If given subcutaneously it will likely cause slough. Sugar can only be given under the skin or into the vein. If given by mouth, it will increase intestinal fermentation. It is impossible in a paper of this length to go into the technique of the administration of these substances.

The symptoms of acidosis are clear cut and must be carefully watched for. Increasing toxemia, stupor, dyspnea, and cherry red lips are danger signals that must be heeded.

2. We have spent so much time discussing infection of the food mass or fermentative diarrhoea, that there is not much left to give to infection of the intestinal wall. This is caused in most cases by the dysentery bacillus and is commonly called colitis or dysentery. It is characterized by ulceration of the intestinal mucous membrane and as a result of this ulceration we find the stools in these cases containing pus and blood. The diagnosis depends largely upon finding these elements in the stools, when not seen with the naked eye they can be demonstrated with the microscope. Dysentery or colitis is much less common than fermentative diarrhoea.

The treatment of colitis differs greatly from that of fermentative diarrhoea. These patients can tolerate carbohydrates fairly well. In fact in some parts of the country, colitis is treated with higher concentrations of sugar than are given healthy babies. I think this is extreme, however and, likely to lead to dangerous results. Protein milk does not help in these cases and many men think it does actual harm, because the dysentery bacillus thrive on protein. The best food for colitis is buttermilk as the lactic acid forming bacilli are antagonistic to the dysentery bacillus. Home made buttermilk is much better than market buttermilk.

The dehydration problem in colitis is not so great as in fermentative diarrhoea because although the stools may be just as many in number, they are usually smaller and contain less water. However, acidosis must be watched for and treated by appropriate means.

We have not spoken so far of colon irrigations. There is great difference of opinion on this subject. My humble opinion is that they are very valuable in both fermentative diarrhoea and colitis. In the former as soda irrigations, they combat acidosis and help clear away the fermenting mass, in the latter as antiseptic such as argyrol or silver nitrate or as demulcents such as oatmeal or barley water they soothe the inflamed mucosa and promote healing.

Turning now to the subject of drug therapy, we first think of paregoric. Some men use it in all diarrhoea, others condemn it and never use it at all. Undoubtedly paregoric if used unwisely can do more harm than good, for instance if given in the early stages of fermentative diarrohea before the fermenting mass is cleared out, it locks these poisons in the bowel where they are absorbed. Diarrhoea is the effort of the body to rid itself of toxic matter and if we check the diarrhoea before its mission is accomplished, we may do irreparable damage. On the other hand, if the stools are improving in character and yet continue in such numbers that the patient is being exhausted, in other words if the diarrhoea habit has been developed and does not know when to stop, undoubtedly in these cases paregoric is of great value when used in moderation. Bismuth does some good in soothing the inflamed mucosa in colitis and should be used in large doses.

How can we prevent these diarrhoeal diseases that levy such awful toll upon the young children of the land? The most important safeguard, is clean food. It may seem radical to you, but I believe every drop of milk that a baby drinks from May until November in this part of the country ought to be brought to a boil. Then we know that the pathogenic bacteria have been killed. It matters not how carefully milk is inspected, contamination sometimes creeps in. The objections to boiled milk are constipation and scurvy. Constipation is a real objection but scurvy is not, because it can always be prevented by one-half to one ounce of fresh orange or tomato juice once a day and this should be given whether the milk is boiled or not.

We must be careful not to dress babies too warmly. In the hot summer days, a very light cotton sleeveless band and diaper are all the

clothing they need. Babies should drink a great deal of water. It is often difficult to get them to do this, but if the water is seasoned with saccharine or orange juice, most babies will take it readily. It is well during very hot weather to dilute the feeding of milk because excessive heat undoubtedly lowers digestive capacity. We will always see many cases of diarrhoea in summer of course, but if these simple principles can be instilled into the minds of parents, we will certainly see less o them.

BRAIN TUMOR WITH EXHIBITION OF SPECIMEN: CASE REPORT*

By L. Wallace Frank, Louisville.

The operative specimen which I exhibited may be of some interest. It is a tumor removed from the parietal cortex of a boy thirteen years old. He was operated upon today, and this tumor which is about two inches in diameter was removed. Operation was performed this morning and late this evening the patient was doing very well indeed.

History: The patient was referred to us by Dr. T. F. Hale, of Louisville, Kentucky, in December, 1921, with the statement that beginning in October the boy began having spasms in his left foot and leg. Later the thigh became involved, then his left arm and finally his face. When I saw him in December he had slight headache; no vomiting and no choked disc. On basis of the physical findings Dr. Hale made the diagnosis of brain tumor in which I concurred.

Early in December I did a craniotomy, turning back a bone flap two inches square, but found nothing. The pre-central convolution was incised near the Rolandic fissure and we noticed in the lower area an edematous spot about one centimeter in diameter. It was blue in color and traversing this space there were several very large veins. A small amount of fluid was withdrawn by aspirator. This opening was made very near the superior longitudinal sinus. Finding no evidence of increased intra-cranial pressure after incising the cortex I did not feel we were justified in further operative work at the time. The boy was then paralyzed in his left arm and leg and had developed a definite Babinski of the left foot.

Following the operation the spasms ceased and he was apparently much improved. About two months after he returned home which was early in January. He developed headache and vomiting. Twelve days ago he returned to Louisville for further surgery. At that time examination showed a marked choked disc with paralysis of the right external rectus. There were other definite motor symptoms and we again made the diagnosis of brain tumor.

Ten days ago we undertook another bone flap operation, but the procedure had to be discontinued on account of a terrific hemorrhage after incising the scalp and bone. The boy was in a desperate condition while on the table and we gave him saline solution intravenously, put him in an exaggerated Trendelenberg position, and also injected saline solution under the breast.

This morning we completed the operation removing the tumor which is now exhibited. At the time the boy went on the table his hemoglobin showed 63 per cent, erythrocytes 3,500,000. We were afraid to longer postpone the operation as the boy was gradually becoming weaker.

The exact nature of the tumor I do not know, but it is being examined and when full description is received from the pathologist it will be added to this report. The tumor involved the motor region and also the parietal area of the cerebral cortex.

Later we will report the case in detail giving complete findings at operation, with the microscopic examination of the tumor and post operative course.

*Read before the Jefferson County Medical Society.

Saccharomycetic Interdigital Erosion.—In Mitchell's opinion the term erosio interdigitalis blastomycetica is confusing as it leads to the supposition that the causative organism is the well known blastomyces, with which it has nothing to do. He holds that substitution of "saccharomycetica" for "blastamycetica" would be advisable. The chronicity of the disorder, the fixed location of the lesion, the absence of vesication, the resistance to therapy and the occurrence of the disorder on the hands of washerwomen, make the dermatosis worthy of consideration as an entity. Whether or not the yeast is the causative organism, Mitchell does not say, as he has not carried out inoculative experiments, for the reasons given in the foregoing.

CANCER OF THE CERVIX.

WILLIAM H. KENNEDY, Indianapolis.

The uretus is an easily accessible organ so that the diagnosis of cancer in that region can be made with a much higher degree of exactness than is often the case when the malignant growth is in other internal locations. For this reason statistics concerning the occurrence and relative frequence of uterine cancer, can be regarded as more truly representative than those of many other forms. Therefore the statistics available become all the more astonishing and impressive.

Since the opening of the present century the cancer death rate has steadily risen, and an analysis of the figures shows that the preponderance of female victims of the disease has also increased. Separating the female cases brings out the fact that the genital tract is by far the most frequently affected region. Analyzing these figures still further, we find that a very high percentage—varying from 82½ to 95 per cent reported by different investigators—of all cancers of the uterus occur in the cervix. Without bringing forward a bewildering array of figures, we can summarize by saying that one-quarter of all cancers occurring in women are located in the uterus, nine-tenths of which have their origin in the cervix.

Cancer of the cervix, therefore, appears to be the chief disease to which women are peculiarly subject, its incidence greatly exceeding all other gynecological conditions. Likewise, it bulks very large as a cause of death among women, when compared with the mortality from diseases of every description. These figures are even more ominous when we consider the age incidence. We are in the habit of regarding cancer in general as a "disease of middle age," and a perusal of the tables on cervical cancer tends to confirm this belief. A very instructive study on age distribution and incidence has been made by Reuben Peterson,[1] of the University of Michigan, upon 500 cases of uterine cancer, in 406 of which the growth was located in the cervix.

In Peterson's 406 cases of cervical carcinoma 188, or 46.1 per cent, occurred between the ages of forty and fifty. Before forty the cure increased very slowly, and after fifty it fell with remarkable rapidity. The youngest patient was twenty-one and the oldest eighty-two. The greatest number of cases occurred in the period between forty and forty-five, being seventy-nine or almost one-fifth of the entire series. The average age was 45.4 years. It is interesting to observe that this was lower than the average age for the entire series of uterine cancer, which was 47.5.

Peterson's figures are all based on cases occurring in the State of Michigan, or entering the University hospital from closely adjacent territory, but his conclusions can probably be safely regarded as typical of the country at large. Isolated cases far outside the age limits here indicated can of course be found in the literature, but in general these figures correspond closely to those compiled in Europe or in other sections of our own country. Edward B. Cragin has reported undoubted carcinoma of the cervix in a girl of eighteen,[2] and in the discussion of this case Brooks M. Wells reported one which he observed in a married woman of eighteen. These would seem to be the earliest examples of undoubted carcinoma of the cervix. The oldest patient I have been able to discover is Findley's,[3] who was ninety-three.

Cancer of the cervix is of two varieties, which we distinguish according to their site of origin. Normally a stratified epithelium covers the vaginal portion of the cervix. This epithelium is continuous with that of the vagina, ending at the external os, but it sometimes—more especially in older women—may extend upward in the cervical canal. The normal lining of the cervical canal is made up of high cylindrical cells, and this lining ordinarily comes into conjunction with the epithelial lining of the vaginal portion at the external os. Sometimes, however, it extends for a considerable distance into the vaginal portion. If a cancer has its origin in the stratified epithelium, no matter whether it is in the cervical canal proper, or in the vaginal portion, it is called *squamous-cell carcinoma.* If it begins in the cervical glands, in the cylindrical epithelium, it is term *cylindrical-cell* or *adeno* (gland-like) *carcinoma.* Cervical cancer, however, should be classified, not by its special type, but rather by its location—that is, according to whether it arises in the cervical canal or in the vaginal part of the cervix.

Morphologically we may have several types of growth. There are two very distinct forms—the infiltrative, variously called nodular, ulcerative, or parenchy-

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matous; and the vegetative, which is also known as the proliferative, papillary or "cauliflower type."

It is not known why the malignant process should be manifested in any given type in a certain individual. Sometimes the cancerous process may be very closely circumscribed, and in other cases the same type of growth will be found scattered extensively through the tissue of the cervix. Sometimes both forms of development will be found in the same patient, or the process may begin in one way, and gradually extend in a different form. A careful study of these various forms has been made by John A. Sampson,[1] of the Gynecological Department of Johns Hopkins Hospital.

The infiltrative type of squamous-cell carcinoma of the vaginal part of the cervix seems originally to be a proliferation of the epithelium of that part. The growth appears to progress backward into the cervical tissue, so that it is manifested as a closely circumscribed mass. Epithelial cells predominate in the tumor structure, the stroma being but little in evidence, so that we have what is termed a *medullary* or *soft tumor*, which is prone to early necrosis and sloughing. Sometimes, however, the morbid process will be diffused through the cervical tissue, so that a *scirrhus* or *hard tumor* will be formed in which the stroma predominates. Under these conditions necrosis does not set in so early, and the tumor often retains its form until late in the course of the disease. Gradually the deeper tissues of the cervix are invaded, the extension usually being direct, and the cervical canal left intact. The occasional finding of extensive masses of cancerous tissue has given the name *nodular* to this particular form of growth. With the further extension of the process and the replacement of the normal tissue by cancerous growth, the central core, and often the cervical canal itself, will slough away, the cervix being converted into "a crater-like cavity lined by necrotic cancerous tissue." As the disease progresses still further, the bladder may be involved, and a vesico-vaginal fistula opened up. Later the ureters are surrounded and compressed, or the sciatic nerves may be affected, which causes most exquisite pain.

When this same type of growth has its rise in the cervical canal, much the same changes occur. "However, there is this difference. This form of growth, arising from the vaginal portion of the cervix nearly always extends by invading the deeper tissues of the cervix rather than spreading over the mucous membrane and up the cervical canal; as a result the cervical canal may be entirely surrounded by cancer and yet remain intact until late in the course of the disease, and finally the central core, including the canal, may slough away. On the other hand, in cancer arising within this canal the mucosa is the first tissue attacked. From the mucosa the cancer spreads on all sides into the cervical tissue. We, nevertheless, see the changes caused by infiltration and ulceration, and finally the cervix is converted into a thin shell lined by cancerous tissue just as in the other type. In the advanced stages the picture may be such that it is impossible to state whether the disease started within the canal or from the vaginal portion of the cervix. Frequently, however, the vaginal portion of the cervix may not be so invaded—even in cases of extensive cancer developing within the canal."

The cauliflower type of squamous-cell carcinoma seems to start in the vaginal section of the cervix as a proliferation of the epithelium. At the same time a reaction of the deeper portion of the cervical tissue takes place, which causes a papillary extension into the vagina. This papillary outgrowth appears as a proliferated epithelial-cell integument surrounding a core composed of vascular connective tissue, and may take either a pedunculated or sessile form. This tumor grows larger as the morbid process extends, sometimes spreading over the surface of the vaginal portion of the cervix, or perhaps covering the walls of the vagina, or even extending up the cervical canal, until in some cases the vagina is completely occluded. The deeper tissues may at the same time be undergoing invasion, and in some cases we find only a small mass in the vagina, while the deeper tissues may be greatly infiltrated. When the greater portion of the process is massed in the vagina, the external appearance would suggest a condition of great malignancy, but in reality this is perhaps less malignant than any other form of cervical cancer, for there is likely to be little or no extension into the deeper tissues.

When the cauliflower type occurs in the cervical canal, it usually quickly fills the canal, and may jut through the external os and occupy the upper end of the vagina.

The proportion of papillary carcinoma found in the canal is relatively very small.

Adeno-carcinoma may originate at any of the sites designated for the squamous-cell type, and may be of either form, or partake of the characteristics of both. It does not seem to be quite as common a type as the squamous-celled, but most observers agree it is the more malignant of the two.

The literature relating to cervical cancer supplies a great deal of material which—although we are not justified in calling it proof—is yet strong supporting evidence of the theory that all these growths have their origin in lesions originally regarded as benign, if they were ever considered or even known to be present. The exhaustive consideration which Schottlaender and Kermauner[5] have given to this subject in a monograph published in 1912 certainly adds considerable weight to this view. They divide cancers into three classes—immature, moderately mature, and fully mature—basing the classification upon morphological characteristics, leaving out histological considerations altogether. Disagreeing with the ordinary pathological conception, they hold that while we have no definite set of signs by which we may know that the cancer process is about to begin, we still ought to be able to detect the presence of the cancer cells while they are still immature, before destruction has commenced, especially if we are dealing with the squamous-cell type. While this is still regarded as a rather extreme view, there is yet a good deal of existing clinical evidence to support it.

We know that animal experimentation has demonstrated the possibility of changing the cylindrical epithelium of the stomach into the stratified form, and a number of German investigators have shown that certain epithelial changes take place in the uterus as the result of menstruation and pregnancy, and these changes are probably even more likely to occur about the climacteric period. Stone[6] quotes Hitschman[7] as explaining this process in the uterus by the theory that "under pathological conditions the uterine epithelium may acquire the old embryonic capacity of that of the Mueller duct to form indifferently either cylindrical or stratified squamous epithelium in any part of its course, and, exclusive of polypi and other benign tumors, its presence in the form of a true epidermization does not occur except as a malignant process. As a histological criterion in the diagnosis of neoplastic changes its importance is related to its lakia of portion and canal which is often diversity of form and extent in those lesions under discussion."

It is very generally agreed that chronic endocervicitis very often precedes cancer, and there is abundant evidence that cervical erosions are the most definitely established forerunners of cervical carcinoma. Next to those Ewing[8] places leucop- combined with erosion, quoting a number of other writers who have observed cancer following this condition. He has "studied three quite perfect examples of pre-cancerous polyps from eroded cervices showing metaplastic overgrowth and just beginning invasion of the stroma by adeno-carcinoma. In one case a squamous-cell carcinoma is beginning lower down in the cervix."

Stone tells us that the strongest argument against attributing the origin of carcinoma to cervical erosion, is the apparent infrequency of cancer following this exceedingly common lesion. The best clinical record of such a sequence is that of Beckmann,[9] who, in a patient thirty-seven years old, whom he has treated for an erosion over a period of five years, finally witnessed the development of a squamous-celled carcinoma. Stone believes that the infrequency of such observations is in all likelihood due to the fact that very few women come for examination before the cancer is well established; also, perhaps, because these lesions are likely to exist for a long time before any malignant process sets in, so that a single observer seldom sees the patient for the entire period. Stone has collected quite an imposing array of evidence in support of the theory that cervical erosions are largely responsible for malignant growths of that region, yet the fact remains that these erosions are far more common than cervical carcinoma.

When McCann suggested to the Royal Medical Society of London that it should be made "a rule of practice that erosions, if sufficiently marked to call for treatment, should be treated by excision," one of his fellow-members voiced the sentiments of the gathering by commenting, "If we excise every cervix that has been torn in child-birth, the possession of a cervix uteri will soon become an extreme rarity amongst matrons."

When investigating a pathological condition in the cervix, we usually encounter

numerous morphological alterations of epithelial growth which do not appear noticeably different from the regenerative process which takes place after a non-malignant lesion has been sustained by that organ. But continuous observation will sometimes reveal to us alterations which we are able to recognize as indicative of the beginning of malignancy. Stone found in some of his cases "atypical healing erisions which are prototypes of either an epidermoid cancer or a papillary adeno-carcinoma. There are leucoplacias which are prototypes of adult acanthomata. There are glandular hyperplasias which lead to adenoma or adeno-carcinoma. Finally there are focal areas of leucoplacia, combined with adenomatous hyperplasia which may well furnish an origin for tumors designated as adeno-acanthomata. In short, for each type of fully developed carcinoma there is a corresponding type of benign and intermediary change."

Anything which can aid us in making an early diagnosis of cervical cancer should receive most careful consideration, for all are agreed that in early diagnosis and prompt treatment lies our only hope of controlling the cancer scourage.

It is not my purpose at this time to discuss treatment other than to state that in the light of our experience with radium in the treatment of 331 cases of cancer of the cervix, I am convinced that we are on a pilgrimage of achievement.

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BOOK REVIEW

Public Relief of Sickness—By Gerald Morgan. Mr. Morgan discusses American methods of cash relief by means of voluntary insurance against loss of wages due to sickness, and medical relief through free hospitals and dispensaries, and also describes the various European systems with special reference to their shortcomings in the line of medical relief.

He takes up two methods of legislation proposed in New York State for the public relief of sickness—the so-called health center and compulsory health insurance bills, and his conclusion is that medical benefits should be provided by state-aided health organizations, to be developed on the principal of the pay dispensary—only cash compensation for loss of wages due to sickness thus being left to compulsory health insurance.

There are facts and constructive suggestions here that can hardly fail to awaken the interest of employers, social workers and all thinking citizens. The Macmillan Company, Publishers, New York.

Origin and History of all the Pharmacopeial Vegetable Drugs, Chemicals and Preparations with Bibliography—Volume 1, Vegetable Drugs, 8th and 9th Decennial Revisions (Botanical Descriptions Omitted). By John Uri Lloyd. Prepared under the Auspices of and Published by the American Drug Manufacturers' Association, Washington, D. C. The Caxton Press, Cincinnati, Ohio, Publishers. Price $6.00

This book is the result of a lifetime of research conducted by Professor Lloyd, and has been published by the Drug Manufacturers Association not for profit but as a labor of love. This book makes availaable for the first time a large amount of material, dealing with the history of our materia medica. It contains material obtainable in no other book,—material which should be available to every physician and pharmacist.

Endocrine Glands and The Sympathetic System.—By P. Lereboullet, P. Harvier, H. Carrion, A. G. Guillaume. Translated by F. Raul Mason, M. D., Instructor in Pediatrics New York Post-Graduate Medical School and Hospital; Assistant Attending Physician Willard Parker Hospital; Assistant Pediatrist New York Post-Graduate Medical School and Hospital Out-Patient Department; Assistant Attending Physician, Babies Ward, New York Post Graduate Medical School and Hospital. With the collaboration of Daniel R. Ayres, A. B., M. D., Assistant Professor of Gynecology New York Post-Graduate Medical School and Hospital; Assistant Visiting Obstetrician City Hospital, New York. J. B. Lippincott Company, Publishers, Philadelphia and London.

The translator believes that the writers have

condensed in this volume in a clear and sober manner, our present-day knowledge of the endocrines without the addition of any fanciful theories. The study of the sympathetic system has been included as these two subjects are closely connected. No subject in medicine at the present time has aroused such a wide-spread interest as endocrinology. It appeals to the gynecologist because it is in this field that endocrinology has made the greatest advances. It appeals to the diagnostician because many conditions may be directly or indirectly due to endocrine derangement. It appeals to the neurologist because functional derangements of the ductless glands are directly responsible for many nervous and mental conditions. It appeals to the practitioner because it is a modern treatment for many nervous and mental conditions. It appeals to the practitioner because it is a modern treatment for many diseases he meets.

The Writing of Medical Papers.—By Maud H. Mellish, Editor of the Mayo Clinic Publications. W. B. Saunders Company, Publishers, Philadelphia and London.

Many men and women who unfortunately do not possess the art of writing and have not acquired its usable substitute, the craft of writing, have yet chosen medicine as a life-work, for success in which they should be able to write well for the medical profession. They desire therefore to acquire the craft of writing with the least possible effort or delay. For these there is a need, not for new manuals, but for a handbook adapted especially to their profession and including the essential points to be found in general textbooks. The present handbook is an attempt to supply this need in a brief form, for writers of medical papers, and for those who edit and read proof on such papers.

Lecture on Dietetics—By Max Einhorn, M. D., Emeretus Professor of Medicine at the New York Post Graduate Medical School and Hospital; Visiting Physician to the Lenox Hill Hospital, New York. 12 mo. of 244 pages. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $2.25 net.

These lectures were delivered by Dr. Einhorn at the New York Post-Graduate Medical School. They include principles of diet and nutrition, digestibility of food, diet in health and disease, care of digestion, dietetic treatment of chronic diarrhea, diabetes mellitus, the Allen treatment, diet in renal diseases, in gout, in operative cases, preparation of food for invalids, subcutaneous, rectal, and duodenal alimentations, indications for artificial nutrition.

The Practical Medicine Series—Comprising Eight Volumes on the year's progress in medicine and surgery. Under the General Editorial Charge of Charles L. Mix, A. M., M. D. Volume 1, General Medicine. Edited by George H. Weaver, M. D., Lawrason Brown, M. D., Robert B. Preble, A. M., M. D., Bertram W. Sippy, M. D., Ralph C. Brown, B. S., M. D. Series 1922, Chicago. The Year Book Publishers, 304 South Dearborn Street. Price $3.00.

The subjects considered in this volume are Infectious Diseases, Endocrinology, Diseases of the Chest, Blood and Blood Making Organs, and Diseases of the Gastro Intestinal Tract.

Clinical Medicine, Tuesday Clinics at the Johns Hopkins Hospital.—By Lewellys F. Barker, M. D., L. L. D., Professor of Medicine, Emeritus, Johns Hopkins University; Visiting Physician to Johns Hopkins Hospital, Baltimore, Md. Octavo of 617 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $7.00 net.

This work is a clinical medicine presented through the analysis of cases brought into the amphitheater and lecture-room for clinical teaching. It teaches medicine as the practitioner must learn it in his office and bedside work—by actual contact with patients, by history taking, by examination, noting of symptoms, their interpretation in diagnostic terms, and finally, the determination of the plan of treatment and its institution. The conditions chosen for this volume are those frequently met in general practice, but not always recognized. Dr. Barker goes very thoroughly into diagnosis, because upon the correctness of the diagnosis naturally depends the treatment. In the opening chapter he details his method of diagnostic procedure, of reasoning, of consecutive logical thinking by which the diagnostic survey is made and the diagnosis reached. Then the methods are applied to the cases presented.

The features of each case are brought out through the quiz method, Dr. Barker elaborating on the answers, emphasizing the important points and driving home the conclusions.

The Treatment of Fractures: With Notes Upon a Few Common Dislocations.—By Charles L. Scudder, M. D., Assistant Professor of Surgery at the Harvard Medical School. Ninth Edition, Revised. Octavo volume of 749 pages, with 1252 illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Polished Buckram, $8.50.

Dr. Scudder's Treatment of Fractures is offered the medical profession after the most thorough revision it has undergone in many years. Much new matter and 200 additional illustrations have been added as evidenced by the greater number of pages despite the use of a wider and longer page.

The revision has been made along the surgical highways opened up by the following progressive improvements in the treatment of fractures:

The Carrel-Daken treatment of infected wounds.

Recognition of the importance of the skilled immediate treatment of recent fractures, and their complications.

The imminent universal acceptance of the Thomas splint and the principles of its use.

Indirect and direct traction in correcting shortening fractures of the long bones.

The safety and efficiency of direct bony traction, especially in fractures of the long bones of the lower extremities.

The necessity of an x-ray of every fracture.

The revolt against the general use of metallic sutures and plates.

The adoption of the suspension of fractures of the extremities.

The necessity of the early active movement of joints contiguous to the fracture; and of septic joints.

Acknowledgement of the soundness of the Whitman method of treating fractures of the neck of the femur.

The 1252 illustrations in this book are noteworthy for the manner in which they graphically point out the right way to do things.

An Outline of the Pirquet System of Nutrition.—By Dr. Clemens Pirquet, Professor of Pediatrics of the University of Vienna, Austria, 16-mo. of 96 pages. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $2.00 net.

The book explains the principal fact of the author's system of nutrition and its practical application to pediatric practice. The nem values of the principal food-stuffs are given, and a table of Pelidisi Indices. There are chapters on body measurements and nutrition, calories and nems, feeding in the first year, nutritional treatment of tuberculosis, proper feeding as a preventive, and a complete bibliography.

Animal Parasites and Human Disease—By Asa C. Chandler, M. S., Ph. D., Instructor in Biology, Rice Institute.

572 pages, 6 by 9. 254 clearly reproduced figures. Cloth $4.50 postpaid (22s 6d net.) John Wiley & Sons, Publishers, New York, London, Chapman and Hall, Limited.

This book was written primarily for the general public, on a subject about which there is popular lack of knowledge. An attempt has been made, as far as possible, to avoid technical phraseology, and to omit lengthy descriptions and minute differentiations, which would lessen its value to the lay reader.

Special emphasis has been laid on the biological and practical aspect of the subject, and particular attention is paid to the effects of parasites on their human hosts, either directly as parasites or as disease—transmitting agents—to their life histories—to their means of dissemination—and to the proper methods of treatment and prevention. The important facts are made available for the non-scientifically trained person who is interested in human health and its maintenance.

In addition, it is a book of prime importance to physicians, public health officers, and nurses, particularly those engaged in public health work, since it gives them the essential facts concerning parasitic diseases in such a way that the principles underlying their control can be fully understood and intelligently followed out.

As a text or reference book, it is well adapted for courses in parasitology, in the medical and premedical curriculum.

All school officials and school teachers, particularly in rural districts, should have a copy of this book, with its wealth of information of vital importance on hand for constant reference.

This new edition brings the work thoroughly up to date in its field.

Some of the more important changes and additions:

1. Recent work on yellow fever, which has necessitated the shifting of this subject to the chapter on spirochaetes.

2. An account of the Rickettsia-like organisms, and their probable relation to Typhus fever, Trench fever, Rocky Mountain Spotted fever, etc.

3. An entire revision of the chapter on Amebae, and the greater part of the chapter on Intestinal Flagellates and Ciliates.

4. New methods of examination for eggs of parasitic worms.

5. New methods of controlling fluke diseases.

6. An account of Trench fever, and the work done on it by the American and British Commissions.

7. New facts concerning the life histories, treatment, etc., of numerous parasites and parasitic diseases, e. g., human liver and intestinal flukes, fish tapeworm, itch mites, etc.

8. Discussions of many parasites and diseases not mentioned in the first edition.

A Manual of Pharmacology and its applications to Therapeutics and Toxicology By Torald Sollmann, M. D., Professor of Pharmacology and Materia Medica in the School of Medicine of Western Reserve University, Cleveland. Second edition, entirely reset. Octavo of 1066 pages. Philadelphia and London: W. B. Saunders Company, 1922. Cloth $7.00 net.

All the new remedies are included, and detailed instruction as to their use is given particular attention—vaccines, serums, salvarsan, neosalvarsan, emetin, pituitary extracts, the coal-tar products—all those new remedies being so extensively discussed and employed. In the Appendix are given a Tabulation of Average Doses, a check-list for the study of preparations, and an extensive bibliography.

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ANNUAL MEETING, CRAB ORCHARD SPRINGS, 1923

COUNTY SOCIETY REPORTS

Whitley: After due notice to all physicians in the county there was a meeting of the Whitley County Medical Society held at Williamsburg, on November 28, for the purpose of electing officers for the ensuing year and drafting resolutions of respect to the memory of Drs. J. N. McCormack and J. H. Parker.

On motion and second the following officers were elected for the ensuing year:

J. D. Adkins, President; C. A. Moss, Secretary-Treasurer; Garfield Howard, Vice-President; L. B. Croley, W. J. Smith, E. B. Stonesifer, Board of Censor; L. B. Croley, Delegate; C. A. Moss, Alternate.

The following committee appointed on resolutions with instructions to draw resolutions on deaths of Drs. McCormack and Parker: J. D. Adkins, E. S. Moss. There being no further business, meeting was adjourned.

C. A. MOSS, Secretary.

Metcalfe: The Metcalfe County Medical Society met in the Circuit Clerk's office in Edmonton at a call meeting for the purpose of electing officers for the year 1923. The meeting was called to order by the President, James Taylor on December 23, 1922, with the following members present: J. A. Yates, George T. Reid, of Sulphur Well; P. W. Bushong and H. R. Vanzant of Edmonton. On motion and second James Taylor was nominated and elected President and H. R. Vanzant was elected Secretary; P. W. Bushong was elected Delegate, and J. A. Yates and George T. Reid were elected Alternates; S. R. York, Center, George T. Reid, Sulphur Well, and W. G. Depp, Summer Shade, was elected Board of Censors. There being no further business before the Society, on motion and second the Society adjourned to meet in Edmonton on June 4, 1923.

H. R. VANZANT, Secretary.

Henderson: The Henderson County Medical Society met December 11, 1922, in regular annual business sesson at the Elks Club in this city at 8 o'clock p. m. There were nineteen members present. The following officers were elected to serve for the year 1923: G. W. White, President; C. L. Nollan, Vice-President; Peyton Ligon, Secretary-Treasurer; J. C. Mosley, Delegate; E. L. Busby, of Henderson, Alternate, and E. N. Powell, Corydon, and N. Y. Marshall, Henderson, Censors.

The prospect for a better society was never brighter. The Society voted unanimously to meet once each month for a luncheon, after which the scientific session will be held. Our aim is every physician in the county a member for the year 1923.

PEYTON LIGON, Secretary

Bourbon: The Bourbon County Medical Society met at 8 p. m. at the Court House in Paris on Thursday, October 26, 1922. The following members were present: Drs. W. C. Ussery, F. M. Faries, H. M. Boxley, J. A. Orr, J A. Gilkey, C. B. Smith, C. G. Daugherty, J. A. Stoeckinger and M. J. Stern. Dr. C. G. Lucas of Louisville, Dr. J. T. McClymonds and Dr. Marmaduke Brown were present as visitors.

C. G. Lucas of Louisville, read a paper on "Duodenal Drainage" which was freely discussed.

M. J. STERN, Secretary.

Bell: Dr. John Henry Parker of Corbin was instantly killed by a moving train Tuesday, Sept. 25, aged 61 years. He was a graduate of the University of Louisville Medical Department, and began his practice in Corbin about thirty years ago. His ready humor, and bright outlook coupled with his undisputed ability soon won him a wide practice. Years before good roads were known in this section, he rode horse back over miles of rough country and endured hardships undreamed of now. His vacations were spent at clinics or lecture courses so that he coupled the experiences of those hard years with the best to be gained from modern methods.

He was health officer here in Corbin's boom days and struggled with the sanitation and pure milk supply problems and by so fostering that unpopular work made possible our present Health and Welfare Association. He was railway surgeon for the L. & N. and was killed while about the duties necessary as such. He was a member of Bell, Whitley, and the State Medical Societies, and a Fellow of the American Medical Association. He had that tact and courtesy that is known among us as "being professional" that made co-operation with him in any cause, a pleasure .

Whereas: A mysterious providence has snatched from our midst Dr. John Henry Parker our beloved co-worker,

Be it Resolved: That in his untimely demise Corbin has lost a public spirited and broad minded citizen, that the Corbin Medical Society has lost one of its oldest and most valued members,

Therefore be it Resolved: That we tender to his bereaved wife and adopted son our most sincere sympathy and commend them to Him who alone can heal the broken heart; that as an expression of our esteem and fraternal regard for Dr. Parker these resolutions be spread on the minutes of the Corbin Medical Society a copy tendered the bereaved wife and a copy sent to the Kentucky Medical Journal and The Corbin Times-Tribune.

Committee—J. F. WILDER, Chairman,
B. J. EDWARDS,
F. S. SMITH.

Knox: The Knox County Medical Society met December 22, with Dr. Logan. Dr. J. S. Lock was present and explained in detail the proposed protective organization, and a few of our members are sending their checks for the $15.00 initation fee. As this was the meeting for the election of officers the program was dispensed with and the meeting turned into a general discussion of topics of interest. We are always glad to have Dr. Lock with us, as he is one of us. Keeps his membership with us and is a Knox County product, and when he visits us he always has something of interest to relate. B. P. Jones was elected President; S. C. Jones, Vice President; F. R. Burton, reeleted Secretary and Treasurer, and also elected delegate to the state meeting. Our meetings are the 4th Friday night in each month. Program for next meeting is: J. G. Tye, Blood Pressure; G. H. Albright, Definite Diagnosis and Definite Medication.

F. R. BURTON, Secretary.

Todd: Every doctor in the country with one exception has paid their dues and we are having some real interesting and instructive meetings all during the winter while our attendance has been small, it would not have been large if every one had been present but I must say it has been great.

We have a little bunch of the greatest and best doctors (while not the biggest) in Kentucky and every one is on the square. Another thing I almost forgot to mention, a great many of our doctors have been too busy to report their cases that are considered contagious, but are doing better now.

E. W. Weathers was not present at our last meeting but will be there next time and will be regular in his attendance, a young lady visitor came to his house yesterday, the weight and name was not given, the weather was so cold the scales would not work and they have been too busy to think of a name. Our next regular meeting will be at Guthrie Wednesday evening at 6:30 p. m., March 7.

W. E. BARTLETT, Secretary.

Fulton: The Fulton County Medical Society held a meeting January the 11th, at Fulton, Ky. There were fourteen members present. An election of officers was held, and Dr. J. C. Morrison, of Hickman was elected President, and Dr. J. M. Hubbard, of Hickman, Secretary.

A motion was made and unanimously carried, to extend to Dr. J. S. Lock an invitation to conduct some Tuberculosis Clinics in our county, which we hope to have in the near future.

J. M. HUBBARD, Secretary.

Barren: The regular meeting of the Barren County Medical Society was held December 20, the meeting was called to order by President, A. T. Botts. It being the meeting for the annual election of officers, no program had been prepared. The following were unanimously elected to the offices stated below, viz: President, E. D. Turner, Cave City; Vice-President, Clifton Richards, Glasgow; Secretary, C. C. Turner, Glasgow; Assistant Secretary, Miss Ollie Bell, Glasgow; Delegate, C. C. Howard, Glasgow; Alternate, A. T. Botts, Glasgow.

The following men paid their dues for the year, 1923: E. D. Turner, Cave City; C. C. Howard, Glasgow; Clifton Richards, Glasgow; M. E. Loftus, Game; A. T. Botts, Glasgow; L. E. Botts, Glasgow; C. C. Turner, Glasgow; Fidella Edwards, Glasgow.

There being no further business to come before the meeting the society adjourned, to meet again on Wednesday, January 17th, 1923.

C. C. TURNER, Secretary.

Fleming: At the regular meeting of Fleming County Medical Society, December 13, 1922, the following members were present: T. Riblin, in the chair; J. W. Bellomy, A. M. Wallingford, Jr., A. S. Robertson, S. F. O'Bannon, W. T. Jessee, E. T. Runyan, C. R. and C. L. Carr, Chas. W. Aitkin, J. H. Kelley, was admitted to membership. The following officers were elected for 1923: J. B. O'Bannon, President; S. F. O'Brien, Vice-President; Chas. W. Aitkin, Secretary-Treasurer; C. L. Garr, Assistant Secretary and Treasurer; Censors: A. S. Robertson, E. T. Runyon, and W. T. Jessee; Delegate to State Meeting: A. S. Robertson; Alternate, E. T. Runyon;

CHAS. W. AITKIN, Secretary.

Fleming: At the regular meeting January 10, 1923, there were present Drs. J. B. O'Bannon, in the chair, T. Ribelin, C. R. and C. L. Carr, A. S. Robertson, and Chas. W. Aitkin.—A Case of Vincent Angina involving the general pharynx was reported and all the members present took part in an active discussion of this and similar throat affections.

CHAS. W. AITKIN, Secretary.

Fleming: Regular meeting on February 14, there were present: J. B. O'Bannon, presiding, J. W. Bellomy, J. H. Kelley, A. S. Robertson, C. R. and C. L. Garr, W. S. Reeves, Chas. W. Aitkin. The Secretary reported a membership of fifteen and all dues paid to State Secretary.

J. W. Bellomy reported a fatal case of scarlet fever in a man 55 years of age. He also reported some cases in an epidemic of a mixed diphtheria, scarlatinal infection and of three exophthalmic goiter cases all females, ages respectively 18, 22, and 38 years. Each of these women had been exposed to diphtheria and to scarlet fever during former outbreaks but neither of them had the single infection but during the epidemic of diphtheria—scarlatina all three had the mixed diseases and made good recoveries.

Scarlet Fever was under general discussion by all members present. Dr. O'Bannon reported an interesting case of glossitis caused by suppurative lingual gland.

CHAS. W. AITKIN, Secretary.

NEWS ITEMS AND COMMENTS

Dr. H. F. Raymer, at Reedyville, Butler County, writes that they need a good physician there. They have a large field without any physician in a good paying country practice.

This is in one of the best sections of Kentucky and is a splendid opening for a man who wants to do a large practice, most of it on horseback.

Dr. Emmet F. Horine announces the removal of his office to Suite 370-72-74-76 Francis Building, Fourth and Chestnut Streets, Louisville, Kentucky. Hours: 2 to 4 p. m. daily, except Sunday and Wednesday. Telephones: office—Main 246, City 460; Residence—East 1500, Highland 1500. Special attention to Cardio-Vascular diseases.

During January, the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies:

Lederle Antitoxin Laboratories:
Bacillus Acidophilus Milk-Lederle.
E. R. Squibb and Sons:
Bacillus Diphtheroid Allergen-Squibb.
Staphylococcus Citreus Allergen-Squibb.
Bacillus Influenzae Allergen-Squibb.
Egg Yolk Globulin Allergen-Squibb.
Horse Serum Allergen-Squibb.
Winthrop Chemical Company:
Theocin Sodium Acetate.

Medical Treatment of Pyloric Stenosis.—The following medical treatment of conducted at the University of Michigan Hospital in a severe case of pyloric stenosis or spasm: If the infant is already dehydrated because of fluid loss due to vomiting, and the symptoms are urgent, it is given parenteral fluid as long as conditions demand it. Usually subcutaneous or intraperitonela saline solution is given. A stomach tube is passed and the gastric contents secured for ana'ysis and measurement. A thorough lavage with plain water is then done and the formula given through the tube. The formula usually consists of a boiled skimmed milk and water and dextrinmaltose combination, to which may be added 4 per cent of cereal. The strength and quantity is suited to the caloric requirements of a normal infant of the same age and weight. The lavage is repeated before every feeding at first. Atropin is added to each bottle in a quantity sufficient to keep just short of the limit of tolerance, unless distinct improvement is secured before the upper limit is reached. As the symptoms decrease the number of lavages is gradually reduced, then the dosage of atropin is carefully decreased as the infant's conditions warrants. The formula is also regulated from time to time so that the retained amount continues to fully cover the caloric requirements of the patient.

Role of Anaphylaxis in Angioneurotic Eruptions.—According to Ravogli anaphylaxis plays a leading role in so-called angioneurotic eruptions. Toxins from faulty metabolism get into the circulation and are carried to the periphery where they irritate hte sensory and trophic nerve filament, causing itching, hyperaemia, and cutaneous exudation. Urticaria, angioneurotic edema, dermatitis herpetiformis, pruritis and recurrent eczema are leading types of vasomotor anaphylactic skin eruptions. Protein sensitization is very useful for diagnosis and in the treatment of these distressing conditions. The treatment, which has given Ravogli the best results has been the administration of calomel in small doses from 1-5 to 1-3 grain, together with sodium bicarbonate, repeated two or three times a day. Calomel has a specific action against the yeast fungi which remain in the gastro-enteric canal, and against the colon bacilli. At the same time the use of magnesium sulphate with sodium sulphate is beneficial, removing excretory substances from the system. Sodium bicarbonate and potassium citrate restore the alkalinity of the blood and remove acidosis. In obstinate cases the administration of phenyl together with sodium bicarbonate as an intestinal antiseptic, has given good results, and obstinate cases fo chronic urticaria, and of dermatitis herpetiformis have yielded to this treatment.

Antecedents of Uterine Cancer.—Stajano argues that the modifications in endocrine functioning—especially ovarian functioning—which form the menopause, alter conditions in the uterine cervix. This opens the portal to malignant disease at this point. Various other factors—intercurrent syphilis, typhoid, intense emotions, or the like—may modify endocrine functioning, and thus secondarily alter conditions in the cervix even in the young, and the satellite cancer may develop. When it does develop under these conditions, all the catabolic functions are so active that the cancer runs a rapidly fatal course. He has never found any record of cancer of the cervix under 23 and it is very exceptional after 64. The uterine cervix is prematurely aged by inherited or acquired taints, as he shows by his list of thirty-seven cases of this "cervical cancer" in young women. In nearly all it had been preceded by some known predisposing factor, usually syphilis, very severe typhoid, or rapidly recurring pregnances, aging the women prematurely.

Theory of Hormone Action of the Synovia in Tendon Regeneration.—Wehner refers to Salomon's finding that outside of the tendon sheath the tendon ends are sure to heal, whereas within the sheath they never heal. Salomon's view is that the absence of regeneration in the enclosed tendon is due to inhibiting hormones in the synovial fluid. On the basis of his theory, Salomon had recommended no suturing of the tendon sheaths but rather the removal of a large portion of the tendon sheath. In his experiments on from 1 to 2 year old rabbits and dogs 6 months old, Wehner was able to secure excellent regeneration of the quadriceps tendon (after excision of the patella) without a suture or bridging over of the defect or the use of a fixation bandage. What he mephasizes is the fact that the synovia of the knee joint, which, without doubt came in contact with the tendon defect or the regenerating tendon tissue exerted no action that inhibited regeneration.

Experimental Arsenic Cancer.—In the hope of determining experimentally if arsenic might act as a tumor producing, or carcinogenic, agent, Leitch and Kenneway fed a series of rats and mice on bread containing arsenic. The experiments were unsuccessful. Then potassium arsenic was applied locally. In three months' time two thirds of the mice had died, but a growing tumor was produced in one of the survivors. Microscopic examination of a section through the tumor showed it to be a typical squamous cell carcinoma. There were also metastases in the lung in this animal.

KENTUCKY MEDICAL JOURNAL

BEING THE JOURNAL OF THE KENTUCKY STATE MEDICAL ASSOCIATION

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EDITORIAL

HAVE YOU PAID YOUR DUES?

This is the last issue of the Journal which will reach you unless your dues are paid to your County Secretary this month.

Our members will understand that we have no option in the matter. The postal laws provide that society dues must be paid so the subscription can be deducted or the Journal cannot be mailed.

The insurance laws prevent our assuming charge of even the most unjust malpractice suit for a member whose dues are not paid—both at the time that the matter alleged in the suit occurred, and at the time the suit is brought. We already have the largest paid membership we have ever had, and it is important that every member remind all non-members of the benefits and importance of prompt payment of dues.

A malpractice suit recently cost a Kentucky physician $800.00—that would have been cared for by the State Association had he not carelessly failed to pay his dues for the preceding two years. We do not want this sort of thing happening to our physicians, and if everyone will help, it cannot happen again.

THE SCIENTIFIC PROGRAM

The president-elect, Dr. Frank Boyd, and Dr. E. W. Jackson, of Paducah, the active member of the Committee on Scientific Work, are getting together a splendid scientific program for the Crab Orchard meeting this fall.

Almost every year some member of the Association decides along about the first week in September that he desires to communicate something of special importance at the annual meeting and he is not infrequently quite aggrieved because he is unable to get a place on the program at that late date. Three months ago the Journal first called attention to Dr. Jackson's activity in this year's program. He is receiving a number of letters from physicians making suggestions in regard to it. He is very anxious to make this the most representative program that has ever been presented at an annual meeting and requests us to again call the attention of the profession of the State to his need for their advice and support in accomplishing this purpose.

THE NATIONAL HEALTH EXPOSITION

Just a year ago the State of Kentucky took the first annual National Health Exposition of visual education in right living. This was the first annual National Health Expisition at Louisville in February, 1922 wherein more than one hundred national, state and local organizations, departments and institutions by means of displays and demonstrations taught the general public many things concerned with the prevention of disease and the improvement of health.

Lively, intelligent interest was manifested by the majority of those attending the Exposition. Complete or partial physical examinations were made for more than twenty thousand men, women and children. These were referred to their family physicians and dentists for such treatment as the examinations indicated was required. Surveying the Exposition's results from the standpoint of a year's time elapsed reveals that few community enterprises have ever succeeded so well. There has been a much greater demand for sanitation in homes, workshops, offices and factories. Persons in the early stages of disease have apparently swamped Louisville institutions and organizations which possess facilities for dealing with such matters. Great improvement is noted not only in this city but throughout the state in the matter of sewage disposal, the elimination of typhoid fever menaces, attention to growths of an apparent pre-cancerous nature and a very definite appreciation on the part of the public that the ethical medical profession is fully prepared and anxious to serve with the purpose of teaching health habits and preventing disease. It is notable that the annual increase in demands for service at the local Tuberculosis Sanitarium has doubled and it is ascribed to the knowledge gained on this subject through lectures and demonstration at

the Exposition. In fact, every organization, department and institution exhibiting last year has received many inquiries for information and service because of its exhibit.

Naturally, there is no appreciable change as yet in the death rate from preventable diseases but there has been some reduction in the various classifications of illness. Doctors know that there has been a great increase in the demand for partial or complete physical examinations from people who hitherto have paid little or no attention to the signs of breaking health and in consequence were on their way to serious illness or invalidism. Members of families, employes and employers alike, are demonstrating a greater watchfulness for the first signs of malady. There has been a marked improvement in sanitation measures adopted by the handlers of food commodities. It would be an impossible task to chronicle all the various benefits described by the work performed at the Exposition last year but it may be said that the Exposition definitely affected the lives of many thousands not only in Louisville, but throughout Kentucky and Southern Indiana.

The second annual National Health Exposition, improved and enlarged by reason of last year's experience, will be held in the Jefferson County Armory at Louisville, April 26 to May 5, 1923. Public opinion has brought this about. Better health means greater prosperity, and the Exposition is the means to an end.

Financing the Health Exposition is always a great problem. Sufficient space will be sold commercial exhibitors this year to produce a revenue, amounting to about two thirds of operation expense. The balance of cost will be defrayed by an admission charge to adults. Children will be admitted without charge at any time, when accompanied by parents, teachers or guardians. Any profits resulting from the Exposition will be distributed to the School of Public Health of the University of Louisville and to the Sanitary Committee of the Women's City Club. The great bulk of exhibit space will be devoted to definite health problems as represented by the many organizations engaged in public health work.

The affairs of the Exposition are in the hands of an Executive Committee of representative citizens, chosen at a recent meeting of the Advisory Committee. More than one hundred and fifty men and women are included in membership of the Advisory Committee, and they are bringing to the support of the Exposition many hundreds of others in all walks of life. The co-operation and participation of every organization and every individual throughout Kentucky and Southern Indiana is requested.

The physicians of Kentucky and Southern Indiana will be called upon by many individuals to aid them in performing the necessary entrance requirements for two of the principal contests held in connection with this year's Health Exposition. With the assistance of the Louisville Courier Journal, we are conducting the contest through which we hope to stimulate a widespread interest in the physical examination of the Kentucky women particularly. The apex of this contest is the selection of that woman between the ages of sixteen and thirty years whose health is vigorous and whose manner of living indicates why her condition is excellent.

This woman will be crowned as "Hygeia—Mythical Goddess of Health" and will lead the procession at the climax of the Exposition on May 5. She will typify that which we are all striving for—vigorous mental and physical health through right living.

The second contest concerns the health of babies between the ages of six months and three years. In this, we have the aid of the Louisville Herald. Every baby in Kentucky should be entered into this contest for the reason our investigations disclose the fact that comparatively few, indeed, of these children have the benefit of medical supervision except where actual illness sounds the call for immediate service.

Through these two contests we hope to center the attention of the people in this entire section upon the necessity of good medical supervision throughout all the years of their lives and this can be accomplished if every physician will give such time as he finds possible in aiding this plan's fulfillment.

The third contest also provides a very striking health interest. Prizes aggregating $1,020 have been provided for plans suitable for the construction of houses on 25, 30 and 40 foot lots—such houses to have from four to six rooms with bath.

Models constructed from the prize winning plans will be made available to householders and small builders. Models constructed from the prize winning plans will be displayed in the Exposition. We believe this contest will go a long way toward solving the housing problems not only in Louisville but in other cities throughout the state. The Louisville Post is aiding us in this contest.

The Exposition will contain more than three hundred exhibits by city, state and national organizations. We believe—because of

our past experience—that these exhibits will have a wonderfully beneficial effect upon the public health of the State of Kentucky.

Public Health Institute

The United States Public Health Institute, under auspices of the United States Public Health Service and the State Board of Health of Kentucky, will be held in connection with the Health Exposition. Speakers of national prominence will be provided to discuss public health measures and activities. A conference of public health workers will be held in connection with the Institute. Daily sessions will be held commencing April 30.

In connection with the more serious aspect of health education and public health generally, we have arranged for a great program each afternoon and evening of the Exposition, where motion pictures on health subjects, lectures on disease and its prevention and special features of an entertaining nature, will heighten the interst in this excellent demonstration.

We feel that every doctor, every nurse, every dentist and every public health worker in the State of Kentucky and in Southern Indiana, owes it to himself to be present at this Exposition. Thousands of object lessons, quickly learned through visual education, will prove invaluable to every community in the state. The physician is naturally expected to know all things about public health, whether or not it directly concerns his daily practice, and the Health Exposition this year will provide a practical post graduate course in all public matters for all the professions.

SOME POST GRADUATE LECTURES

In connection with the National Health Exposition, which will be held in Louisville April 26th to May 5th, inclusive, there will be a U. S. Public Health Service Institute, which will offer some splendid opportunities to those physicians who take advantage of them from April 30th to May 5th.

Especially noteworthy will be the lectures of Drs. O. C. Wenger, of Hot Springs, Arkansas, on the treatment of syphilis and gonorrhea, and Boswell, of the State Sanatorium of Mississippi, on the early diagnosis of tuberculosis and on what cases should be referred to the sanatorium and what cases can be properly treated at home. Dr. W. F. Draper, an Assistant Surgeon General of the U. S. Public Health Service, will also deliver lectures on disease prevention and sanitation. It is hoped that the distinguished State Health Officer of Kansas, Dr. S. J. Crumbine, will also be present. United States Senator-elect Copeland, who was for many years been the City Health Commissioner of New York City, will also be present for three days.

These are names to conjure with in American medicine and the lectures they will deliver will be available without any charge to the physicians of Kentucky. They will emphasize the modern conception of their several subjects for the general practitioner of medicine. Dr. Wenger's practical talks on the treatment of syphilis and gonorrhea will be worth thousands of dollars to the men who hear them.

An enormous amount of work will be done in the Health Exposition which will be of positive value to every physician who attends it, as well as every other person. The methods for the modern systematic examination of the well will be thoroughly demonstrated. Thoughtful members of the profession recognize in this relatively new procedure possibly the most important movement that has ever been started by the profession with the view to an improvement in the health and efficiency of our people. The physicians of the State are cordially invited to take advantage of this splendid opportunity and show the appreciation we all feel for General Cumming of the U. S. Public Health Service for providing us with so excellent a faculty.

DOPE PRESCRIBING

Under this heading, the Federal Narcotic Supervisor for this section of the United States has recently published through the public press the charge that the physicians of Kentucky more than in any other State were dispensing or prescribing morphine or cocaine to drug habitues. The Journal resents this charge against the medical profession of Kentucky and the officers of the State Medical Association have demanded of this Federal agent proof of his allegations and have agreed to prosecute in the courts and before the State Board of Health every physician who has been illegitimately using any of the derivatives of opium or cocaine in the practice of medicine. If there are any such offenders in Kentucky, the Journal knows that they are very few and they can't be permitted to continue to injure the reputation of the great profession of the State nor to do the very definite damage that is known to follow the indiscriminate use of habit forming drugs. It is clear from the official records that the drug habit is not increasing in Kentucky. Much less of the habit forming drugs are used than formerly. It is very fortunate for the State that practically all of our druggists have helped support the campaign of the State Board of Pharmacy to the end of reducing sales of morphine,

heroin and cocaine. It is essential to the successful prosecution of the campaign that physicians should only dispense or prescribe these drugs when they are really necessary in the treatment of disease. It is important to remember that it is the formal judgment of the Kentucky State Medical Association and the State Board of Health that the use of such habit forming drugs is not necessary over any extended period in the treatment of drug habitues. Such habitues are practically always psychopathic and the administration of morphine, heroin or cocaine does them nothing but harm. Patients should only be permitted to become habitues when they are the hopeless victims of painful disease such as cancer.

From time to time in the Journal the profession will be informed of the results of the investigation and of the extent to which these drugs are illegitimately dispensed or prescribed in Kentucky so that every physician in the State may help in creating the moral sentiment both amongst the general public and the profession as is essential to lessening this evil until it is finally stopped.

A NOTABLE CONTRIBUTION TO SURGICAL HISTORY

With this issue of the Journal we are presenting our readers with a capable contribution to surgical history in the classical paper of Dr. Bryan, of Lexington.

It is difficult for the young doctors of our profession to visualize the character of the practice of medicine. Just before the time of which Dr. Bryan speaks there were no hypodermic syringes and, consequently, no hypodermatic medication, no hot water bottle, no absorbent cotten, no gauze bandages and no clinical thermometers—almost none of the instruments of precision which we now consider so essential. There were no laboratory aids to diagnosis.

Dr. Bryan was a pupil of the great Sayre and a fellow student of Gibney. His story of the first application of plaster of Paris in Pott's disease is a dramatic contribution to surgical history. His description of the method of the use of plaster of Paris and of the preparation of the bandages is as sound now as it was then—in fact, plaster of Paris bandages are not ordinarily so well applied as they were when it was one of the few surgical aids we had.

Every member of the profession in Kentucky will feel grateful to Dr. Bryan for this most interesting article.

INSURANCE IRREGULARITIES

The Journal is presenting to the profession of the State a very important letter from Honorable James F. Ramey, State Insurance Commissioner.

It is inconceviable that any physician is writing false certificates in order to secure benefits from insurance companies for individuals carrying health or accident policies. The issuance of such false certificate would render the offending doctor not only liable for indictment for fraud, but our attorneys also advise us would unquestionably make him guilty of such grossly unprofessional and dishonorable conduct of a character likely to deceive and defraud the public as would make it the duty of the State Board of Health to suspend or revoke his certificate to practice medicine in Kentucky. Unfortunately, just as there are a very few members of the profession who will illegally prescribe or dispense cocaine or morphine or whiskey, thereby bringing disgrace upon all of us, there are always a few men who are willing to take part in any other line of least resistance that will bring them a little compensation.

This is a matter of sufficient importance that it be considered by the county societies, but it would be far better to consider it at open meetings to which non-members should be invited as, practically without exception, it is from their outside ranks that such offenders come. Unfortunately, discreditable action by any physician reflects upon the reputation of the entire profession of that community and it is essential that there be developed in each county such a morale in the entire profession that no members of it can be guilty of those offenses which hurt the standing of the profession and make it helpless to exert its great influence for public good. There is but one way to avoid such offenses. They can help them in the counties where regular meetings are held, where the common problems confronting the profession and the people are freely discussed, where it is understood that the profession proposes to stand together so long as its members are doing their duty, but that it will not countenance action by an individual that brings it into disrepute. The profession of the State will thank Mr. Ramey for his consideration in bringing this matter to its attention, and will correct the evil.

Bronchobiliary Fistula.—Yates cites a case in which an abscess of the liver aappears to have penetrated the diaphragm and discharged itself into the lung, and at the same time to have effected a communication with one of the larger bile passages, with the result that pure bile continued to escape long after all pus had disappeared.

OFFICIAL ANNOUNCEMENTS

INSURANCE IRREGULARITIES

Dr. A. T. McCormack, Secretary,
State Board of Health, Lonisville, Ky.
Dear Doctor McCormack:

My attention has been repeatedly called to a situation I feel confident you can use your good offices to correct. In several communities complaints are made that certain physicians are certifying to sick benefit claims against insurance companies in many cases where no sickness exists, and in many others where the claimant is only slightly indisposed and not entitled to sick benefits, under the terms of their respective policies; are not under medical treatment, nor hindered from their regular employment in whole or in part.

One inspector reports that in more than fifty percent of the cases he has visited (including all of the claims certified to his company in a certain town), the claimants admit the doctor certifying has not been to see them and no medicine or prescription was found in their homes.

The result of this practice is that the total sick benefit claims are higher with many companies than ever before and are mounting higher each week.

The practice has reached such alarming proportions that it has become a menace in certain communities, and must soon be reflected in higher rates if the companies are to maintain funds for the payment of legitimate claims.

No individual company will take the responsibility of attempting to stamp out this evil, because of the fear of the reaction on its particular business. These companies pay several hundred thousand dollars in taxes, fees and licenses to the State and feel that they are entitled to the protection of our laws against fraudulent claims.

This Department stands ready at all times to use all its power to see to it that every policy obligation is carried out and that every just claim is paid by the Insurance Companies, but the payment of fraudulent claims cannot be justified as it works a hardship on and results in higher premiums to the thousands of honest citizens of our State who are insured in these companies.

The companies, as well as the Insurance Department, recognizes the fact that a vast majority of the doctors are honest and conscientious, and not only obey the law but scrupulously comply with the high standard of ethics for which the profession is noted.

I have been advised that your Board would speedily bring to justice such offenders as above mentioned, and that their licenses to practice medicine would not only be revoked but that charges would be prosecuted in the Courts and the guilty punished.

Respectfully yours,
JAMES F. RAMEY, Insurance Com.

SPECIAL SERVICE FROM CHICAGO TO AMERICAN MEDICAL ASSOCIATION MEETING AT SAN FRANCISCO

"The Medical Special De Luxe" which has proven so highly successful in the past, to the annual sessions at New Orleans, Boston and St. Louis will again be operated this year to San Francisco in June by the Harlan Tours, 202 South State St., Chicago, who are its business managers.

Its itinerary includes St. Paul, the Canadian Rockies, Seattle, Portland, and the Shasta Route to San Francisco. The special features this year include visits to Banff, Lake Louise and Glacier in the Rockies with the trip from Banff to Lake Louise by automobile, and the rail journey through the Rockies being made by daylight. At Glacier the members will have an opportunity to hike to the Great Illicilleweat Glacier; a banquet will be given at Seattle, and at Portland the famous Columbian River Highway motor tour will be made.

The "De Luxe" will leave Chicago on June 16th in the evening and arrive at San Francisco Monday morning June 25th. Returning, members have a choice of two routes, one returning direct and the other a more extended tour including the Big Trees of California, Santa Cruz, Del Monte, Santa Barbara, Los Angeles, Pasadena, Catalina Island, Salt Lake City, the Grand Canyon of the Arkansas, the far-famed Royal Gorge and Colorado Springs.

There will also be special cars attached to regular trains leaving Chicago June 19th and 20th, traveling direct overland, a special for the "Golfers" leaving Chicago June 17th, and a special for the "non-affiliated and affiliated" societies that hold their meetings prior to the A. M. A., leaving Chicago on the evening of June 12th, following the same route and itinerary of the De Luxe, but reaching San Francisco on Wednesday evening, June 26th.

The rate from Louisville, Kentucky on the "Medical Special De Luxe" to the Pacific Coast, including the visit to San Francisco would be as follows:

$265.23 per person when two share one lower berth.

$277.02 per person using upper berth on trains.

$282.91 per person using lower berth.

These rates include:—transportation only to Chicago; transfers at Chicago; all necessary expenses while with the "Medical Special De Luxe" Party until San Francisco is reached; room with bath (two persons t oa room) at San Francisco for four nights; transportation from San Francisco to Merced, from which side trip can be made to Yosemite National Park, from Merced to

Los Angeles to Salt Lake City and to Louisville. In other words all expenses from Chicago to San Francisco and transportation only home.

Reservation request should be sent in as soon as possible so that we can assign you rooms with bath at the St. Francis Hotel in Frisco. Send in your check for $15 per person as deposit, this amount applying against your final payment or, will be refunded in full should something come up forcing you to change your plans.

The tour has been arranged as follows:

June 15th:—Leave Louisville.

June 16th:—Leave Chicago at 6:30 P. M. on the "MEDICAL SPECIAL DE LUXE" for California. The tour embraces the Canadian Rockies with visits to Banff, Lake Louise and Glacier, by special schedule with the trip from Banff to Lake Louise and Moraine Lake by automobile. Vancouver, Victoria, Seattle, Portland and the Shasta Route.

June 25th:—Arrive San Francisco at 7:30 A. M. Transfer to Hotel where rooms with bath will be provided.

June 26, 27, 28, 29th:—At San Francisco attending the annual sessions of the American Medical Association.

Leave San Francisco in the late evening in standard sleeping cars, Pullman accommodations included.

June 30th:—Arrive at El Portal, Yosemite National Park in the forenoon, making direct connections with automobiles for the trip into the park. Room and all meals at the Curry Camps (bungalows) included while in the park.

July 1st:—At Yosemite Park.

July 2nd:—Leave Yosemite by auto for El Portal and by rail to Merced and by evening train for Los Angeles. Pullman accommodations included.

July 3rd:—Arrive at Los Angeles in the early morning. Here rooms with bath would be included at the Clark Hotel.

July 4th:—At Los Angeles. Automobile tours to Pasadena and about the city included.

July 5th:—At Los Angeles. Side trip to Catallina Island by trolley and steamer, included.

July 6th:—Leave Los Angeles by automobile for the all day's motor trip to San Diego via San Juan Capistrano. Rooms with bath at the U. S. Grant Hotel in San Diego.

July 7th:—Leave San Diego by automobile for the return trip to Los Angeles, reaching that city at about 6:00 P. M. Leave Los Angeles at 8 P. M. via the Union Pacific. Pullman accommodations included.

July 8th:—Enroute.

July 9th:—Arrive at Salt Lake City in the early forenoon. Here a side trip to Saltair Beach and a motor tour about the city will be included. Leave Salt Lake City in the evening in standard Pullman. Sleeping car accommodations included.

July 10th:—Arrive Yellowstone National Park. Leave in the forenoon by automobile for Old Faithful Inn. Here room and all meals included.

July 11th:—Leave Old Faithful Inn in the afternoon by automobiles for the Lake Hotel. Room and meals included.

July 12th:—Leave the Lake Hotel in the forenoon by automobile for the Grand Canyon of the Yellowstone. Room and meals at the Canyon Hotel.

July 13th:—Leave the Canyon by automobiles in the early afternoon and arrive at Mammoth Hot Springs. Room and meals at the Mammoth Hotel.

July 14th:—Leave Mammoth in the early afternoon by automobiles and arrive at Yellowstone Station. Leave in standard sleeping cars in the evening. Pullman accommodations included.

July 15th:—Arrive at Salt Lake City and leave in the afternoon at 4:45 P. M. via the Denver & Rio Grande in standard sleeping cars. Pullman accommodations included.

July 16th:—Pass through the Royal Gorge and the Grand Canyon of the Arkansas in the early afternoon.

July 17th:—Enroute.

July 18th:—Arrive Chicago at 7:30 A. M.

This suggestion would cost $511.56 per person in lower berth.

$473.83 per person should two persons share one lower berth.

$504.29 per person should two persons share one section.

This rate would include:—Transportation from Louisville back to Louisville whether journey is by rail, water or automobile. Pullman accommodations as requested; transfers of passengers and ordinary baggage in Chicago; all necessary traveling expenses while with the "MEDICAL SPECIAL DE LUXE" party; rooms with bath at San Francisco; side trip by rail and auto into Yosemite Park; room and all meals while at hotels in Yosemite National and Yellowstone National Park; rooms with bath at Los Angeles, San Diego; sightseeing trips at Los Angeles,

San Diego, and Salt Lake City; side trip by auto from Los Angeles to San Diego; in other words, every necessary expense from Chicago to San Francisco and then every necessary expense from Friesoto Chicago excepting 35 meals.

To include the Grand Canyon of Arizona it would be necessary to make an additional side trip from Los Angeles, which would mean two nights on trains and two days there, or an approximate total expense for this trip of $70 per person.

FACILITIES OF "K. S. M. A. SPECIAL TRAIN" TO SAN FRANCISCO ATTENDING A. M. A. CONVENTION

An unusual opportunity to combine business with pleasure and make the trip to the annual meeting of the American Medical Association which is to be held at San Francisco, June 25-29, a memorable as well as a profitable one, is presented through the completion of plans for the Kentucky State Medical Association Special Train" to San Francisco.

It will be an ultra-modern, fully equipped and thoroughly inspected all steel train, with observation cars, dining cars and all the other features which make for comfort and contentment while traveling.

The special train will be assembled at Chicago as a convenient starting point. No attempt will be made to operate special cars from Kentucky cities to Chicago, unless a sufficiently large party signifies intention of going. In this event, special cars will be arranged for through local medical societies. These cars will go as far as Chicago, where a transfer will be made to the solid Pullman train.



Royal Gorge.

Enroute to San Francisco, the party will pass through many of America's foremost scenic regions. A generons number of stop-overs and side-trips have also been arranged. Among some of the points of interest to be visited on the way to Frisco are:

1. Denver and the Rocky Mountain Parks.
2. Colorado Springs and a trip by cog-rail to the summit of Pike's Peak.
3. Cross the Continental Divide at Tennessee Pass, 10,500 feet above sea level.
4. Mount of the Holy Cross, Yale and Harvard Peaks, etc.
5. Beautiful Eagle River Canyon.
6. Great power projects of the Colorado river.
7. Glenwood Springs, famed health resort and fruit center.
8. The Royal Gorge.
9. Castle and Sentinal Rocks.
10. Famous copper district of Utah.
11. Salt Lake City and the great Salt Lake.
12. Magnificent salten plain.
13. Los Angeles, Pasadena, Hollywood, Cawson's Ostrich Farm, Citrus Groves, Santa Catalina Islands, Long Beach, Spanish Missions, San Pedro, San Diego, Coronado, etc.
14. The great Redwood Trees of California.
15. Historic Santa Barbara Mission.
16. San Francisco.

Itinerary of the Kentucky State Medical Association Special Train to San Francisco, California, for the annual convention of the American Medical Association (June 25-29, 1923): Leave Chicago 11:30 P. M., June 16th, C. & N. W. Ry.

Arrive Omaha 1:30 P. M., June 17th, C. & N. W. Ry.

Leave Omaha 3:30 P. M., June 17th, Union Pacific Ry.

Arrive Denver 6:45 A. M., June 18th, Union Pacific Ry.

Transfer to the Albany hotel for breakfast. Leave Albany hotel at 8:00 A. M. in eleven-passenger White automobile, via North Denver to Golden, to the summit of Lookout Mountain, over Genesec Peak and through Bergen Park. The return trip includes the twenty-mile ride through one of the foremost scenic wonders of the Rocky Mountain region—Bear Creek Canyon; Passing Evergreen, the park of Red Rocks; Morrison; Fort Logan, Speer Boulevard; and South Denver.

Leave Denver 11:30 A. M., June 18th, D. & R. G. Ry.

Arrive Colorado Springs 2:00 P. M., June 18th, D. & R. G. Ry.

Immediately upon arrival at Colorado

Springs, a trip will be made to the summit of Pike's Peak by the famous cog-railroad. Upon return, the evening dinner will be served at the Hotel Antlers. The evening in Colorado Springs is left open for your enjoyment.

(Sleepers ready for occupancy 9:30 P. M., June 18th).

Leave Colorado Springs 5:00 A. M., June 19th, D. & R. G. Ry.

Arrive at the Royal Gorge about 8:00 A. M.

Arrive Salt Lake City 7:00 A. M., June 20th, D. & R. G. Ry.

Upon arrival at the Capital City of Utah, the party will be transferred to the magnificent Hotel Utah for breakfast, after which a sight-seeing trip will be taken. A visit will be made to the famous Mormon Temple and Tabernacle, famed for its perfect acoustic properties, an organ recital has been arranged. After luncheon at the Hotel Utah, a trip will be made to Saltair Beach, where all may enjoy bathing in the great Salt Lake. Unless



Chicago and N. W. R. Passenger Terminal

you have bathed in the Dead Sea of Palestine, you will not be prepared for the buoyancy and exhileration of these waters. Evening dinner will be served at this well-known resort, after which all those who wish, may dance.

Leave Salt Lake City 11:55 P. M., June 20th, Union Pacific.

(Sleepers ready for occupancy at 9:30 P. M.)

Arrive Los Angeles 7:10 A. M., June 22nd, Union Pacific.

Two side-trips are offered during the stay at Los Angeles. Members of the party may select the one which appeals as being the best.

Los Angeles Side-Trip "A"

Leave Los Angeles 8:00 A. M., June 22nd, Automobile.

Through Huntington Park to Long Beach, Seal Beach, Santa Anna and San Juan Capistrano, thence along a 60 mile scenic trip over the Torrey Pines Grade to Old Town, Mission Cliff Gardens, Balboa Park to San Diego.

Arrive San Diego 6:00 P. M., June 22nd, Automobile.

Headquarters at the U. S. Grant Hotel.

Leave San Diego 8:00 A. M., June 23rd, Automobile.

Sight-seeing trip about San Diego, returning to Los Angeles via Colorado, Tia Juan, Mexico, Point Loma, Ocean Beach, La Jolla, etc.

Arrive Los Angeles 6:00 P. M., June 23rd, Automobile.

Los Angeles Side-Trip "B"

Leave Los Angeles 8:30 A. M., June 22nd, Automobile.

Through beautiful Echo Park to Hollywood, capital of the motion picture world, viewing the studios and homes of some of the most noted film stars, thence through the residential section of Beverly Hills, the National Soldiers' Home grounds and along the ocean front through Ocean Park and Venice.

Arrive Los Angeles 12:00 Noon, June 22nd, Automobile.

Leave Los Angeles 2:00 P. M., June 22nd, Automobile.

A tour of Pasadena and vicinity, visiting some of the most beautiful homes in the world. A stop is made at San Gabriel Mission and at the Cawston Ostrich Farm at South Pasadena.

Arrive Los Angeles 6:00 P. M., June 22nd, Automobile.

Leave Los Angeles 9:00 A. M., June 23rd, Pacific Electric.

Arrive Catalina Island 12:15 Noon, June 23rd, Steamer.

Two-hour ride on Pacific Ocean. Luncheon at Hotel St. Catherine. Trip in glass-bottom boat, viewing wonderful submarine gardens.

Leave Catalina Island 3:00 P. M., June 23rd, Steamer.

Arrive Los Angeles 6:30 P. M., June 23rd, Pacific Electric.

NB.: After the two-day stopover at Los Angeles, the party assembles at the Hotel Alexendria, official headquarters, ready to continue to San Francisco.

Leave Los Angeles 11:50 P. M., June 23rd, So. Pacific Ry.

(Sleepers ready for occupancy 9:30 P. M.)

Arrive Santa Barbara 6:00 A. M., June 24th, So. Pacific Ry.

Breakfast at Arlington Hotel. Automobile trip around city, visiting Santa Barbara Mission and residential district.

Leave Santa Barbara 10:30 A. M., June 24th, So. Pacific Ry.

Enroute to San Francisco, via the picturesque coast line, passing the Big Trees after dusk. At Big Trees station, six miles north of Santa Cruz, is a grove of giant redwoods, twenty acres in extent. "Giant" is the larg-

est redwood in the grove. It is 306 feet in height and 64 feet in circumference.

Arrive San Francisco 9:00 P. M., June 24th, So. Pacific Ry.

From June 25-29, the annual meeting of the American Medical Association will be held.

Further details of the trip west will be found in the official itinerary to be announced soon.

On account of the multitude of special attractions offered on a trip to the Pacific coast, no attempt will be made to keep the party together for the journey back to Kentucky. Each person may select the route that has the most appealing features.

As worked out, "All-Expense" plan is based upon the price at actual cost of the trip and covers every item of expense from Chicago to San Francisco; also railroad transportation from Kentucky to Chicago and from San Francisco back home. This, however, does not include Pullman or chair car charges for the return trip nor hotel accommodations in San Francisco.

Not a single member of the party will be bothered with any details. All arrangements are in the hands of the railway and service bureau representative who will accompany the party.

THE COST

The cost of the Tour from cities indicated below to San Francisco and return, including every actual expense from Chicago to arrival at San Francisco, with railroad transportation (only) from San Francisco to starting point will be:

KENTUCKY	ONE IN LOWER	TWO IN LOWER	ONE IN UPPER	TWO IN D. R.	THREE IN D. R.	FOUR IN D. R.	TWO IN COMP.	THREE IN COMP.
Ashland	$212.96	196.17	206.25	239.35	219.35	209.35	226.65	211.02
Lexington	204.50	187.77	197.85	230.95	210.95	200.95	216.46	202.62
Louisville	200.98	184.17	194.25	227.35	207.35	197.35	214.65	199.62
Frankfort	204.36	187.57	197.65	230.75	210.75	200.75	216.25	202.42
Bowling Green	196.23	181.42	191.50	224.60	204.60	194.60	212.10	196.27
Owensboro	197.66	180.67	190.95	224.05	204.05	194.05	211.55	195.72
Winchester	205.76	186.65	199.03	232.13	212.13	202.13	219.63	203.80
Richmond	206.20	189.39	199.47	232.57	212.57	202.57	220.07	204.24
Henderson	195.76	176.97	189.05	222.15	202.15	192.15	209.65	193.62

Fares shown above do not include Pullman and meals between starting point and Chicago, but do include Railroad fare. Fares shown herein cover Railroad transportation returning via direct lines, these figures include the trip out and back with final return limit October 31.

These figures include the trip out and back with final return limit of Oetober 31.

All-Expense costs of the trip *going out,* including meals, hotel accommodations at stopovers, all sight-seeing trips, and every detail during the eight days between Chicago and San Francisco, in addition to the transportation charges as given in the foregoing paragraph, include:

The railroad fare, if the return trip is made by the way of Portland, Seattle, Vancouver, St. Paul, or the Canadian Rockies, will be $18 additional.

Some of the scenic attractions for the return trip include:

1. *The Grand Canyon of the Colorados*: Southern route by the way of the Santa Fe railway, stopping at Williams and transferring to the Grand Canyon railway for Grand Canyon.

2. *Casa Grande Ruins*: The southern route via Southern Pacific to Tucson, Ariz., and sidetrip to Casa Grande Ruins.

3. *Yosemite National Park*: Southern Pacific railway to Merced Calif., or Southern Pacific to Truckee, Calif., and thence south by way of Lake Tahoe.

4. *Crater Lake National Park*: Southern Pacific to Portland, detouring at Weed, Calif. This can be taken on the Northern route home. The Klamath Indian reservation is also near this stop.

5. *Mt. Rainer National Park*: Northern route by the way of Seattle, stopping off at Tacoma and making a short side-trip.

6. *Glacier National Park*: Northern route home through Spokane by the way of the Great Northern railway. The park is in the Northwest corner of Montana, adjoining the Canadian border.

7. *Yellowstone National Park*: Reached on the middle and northern routes home. Can be reached from Ogden, Utah, or Bozeman, Mont. The Southern Pacific and Northern Pacific railways reach the park by the way of West Yellowstone and Bozeman respectively.

8. *Rocky Mountain National Park*: Reached on middle route home by the Union Pacific railway, stopping at La Salle, Colo., for a short side trip.

Physicians who have planned for a vacation jaunt to the Pacific coast now have an opportunity to combine an outing with a business trip. Enroute out, the physician and his family, if he desires to take them along, will have the advantage of the companionship of fellow practitioners; he will neither be worried nor harrassed by details of arranging transportation, engaging quarters enroute or scanning volumes of literature for information concerning sidetrips; and he will be esconsed in one of the finest trains operating to the west coast today.

Further announcements and details of the trip will be made from time to time, as the plans progress. If there are any questions concerning the trip upon which information is desired, please communicate with the Journal.

ORIGINAL ARTICLES

THE HISTORY AND USES OF PLASTER OF PARIS*

By Joseph Bryan, Lexington.

It is my purpose to give you a brief and necessarily rather imperfect account of the history and uses of Plaster of Paris in the treatment of the surgical injuries and diseases of the bones.

According to the records, Plaster of Paris was first used at a very early period in the treatment of fractures in the form of moulds, and this method was at a later date recommended by such well known surgeons as Hubenthal, Keyl and Deiffenbach, but in spite of this fact the method is not entitled to serious consideration.

Still later the so-called Plaster of Paris or Gypsum bandage was introduced to notice by Mathiesen and Van der Loo, of Holland, the value of which, however, was more especially developed by Professor Nicholas Piragoff of St. Petersburg, surgeon in chief of the Russian Army at Sebastapol during the Crimean War.

So far as I know, the Plaster of Paris bandage was first used in Bellevue Hospital in the treatment and management of fractures about the year 1867 or 1868. At that time, and for a number of years afterwards, much was written and spoken both for and against its use. For instance, the accomplished author of that almost classical work on Fractures and Dislocations, Dr. Frank H. Hamilton, was especially and most decidedly opposed to its use on the ground that it was a fixed or immovable dressing, preventing the surgeon from daily investigating the condition of the limb; the claim being that subsequent swelling in the fixed dressing might lead to disastrous consequences; and indeed, in more than one instance that accident actually happened in the hospital. That claim was eventually met, however, by the old fashioned fracture box, into which, whenever undue swelling was anticipated, the fractured limb was placed in sawdust or sand after the bones had been reduced and the swelling controlled by cooling and evaporating lotions; and subsequently a plaster splint was put on.

Another objection to its use was that the subsidence of the swelling and the shrinking of the soft tissues left the fractured limb entirely too loose in its fixed dressing, and motion, with a certain amount of displacement of the fragments, took place, etc.

But an observant House Surgeon soon learned to detect that condition of things, and by removing the first dressing and applying a second, he succeeded in obviating that difficulty.

Nevertheless, as I have said, the discussion for and against its use was long and bitter, and many of the most prominent surgeons of New York were opposed to it. However, many of the visiting surgeons to the hospital were in favor of it, and as the House Surgeons became more expert in its application and the results obtained got better and better, opposition began to smoulder and it came more and more into use in the management of fractures of all kinds.

So that when I entered the hospital as an interne in April, 1873, quite half a century ago, the use of Plaster of Paris had become quite general although opposition had not entirely ceased.

It goes without saying that the internes became exceedingly expert in the application of Plaster dressings. Indeed, there grew up a spirit of rivalry between the three surgical divisions, as to which should apply the most perfect dressings and get the most perfect results—that the results were good equally goes without saying.

I am sure I have never seen elsewhere plaster dressings so effectively and accurately applied as at Bellevue Hospital. There are several reasons for this. In the first place, the modern gauze bandage with the plaster dumped on and rolled into it, in bumps and wads, is not a properly prepared bandage for a decent job of Plaster dressing; and in the next place, in private practice we have no such perfect mechanical appliances for making plaster dressings as we had in Bellevue.

I imagine it to be unnecessary for me to undertake to describe to this audience the preparation of a Plaster of Paris bandage, but in view of the fact that I have never seen outside of Bellevue Hospital a plaster bandage that I thought was properly prepared. I am going to risk a few observations on that subject.

The gauze bandage was unknown at that time, and in my judgment it would be well if the gauze plaster bandage was unknown at this time. The textile commonly used in the hospital was a thin, coarsely-woven, unglazed cotton cloth, torn into stripes 2½ to 3 inches wide. These were laid upon a table and the dry plaster rubbed into them until the meshes were entirely filled, and only a very thin and uniform layer of plaster left to be rolled into the bandage. The bandage should then be loosely rolled in order to make it absorb the necessary water.

Such a bandage, when properly applied, will leave a perfectly smooth, uniform surface, and when this is covered with a thin

*Read before the Fayette County Medical Society.

layer of plaster of the proper consistency, every turn of the bandage will be concealed and leave the appearance of a cast.

Plaster of Paris may be used in the management of almost any kind of fractures, even fracture of the lower jaw or os calcis, but it is more especially applicable to fractures of the long bones of the lower extremities.

As to the method of its application: So far as my own experience is concerned, the old Bellevue methods have never been improved upon. The material used to cover the limb before the application of the plaster is of the very first importance. It should be of flannel and quite heavy—an old hospital blanket was the material most commonly used. It was cut to fit the limb as smoothly and almost as perfectly as the skin itself. It was also cut an inch and a half longer than necessary both above and below the proposed length of the splint so that after the first or second layers of the plaster bandage were on, this excess of material could be turned back over the plaster and caught by succeeding layers of the bandage. This was done in order to make the free edges of the finished splint smooth, soft and unirritating.

Of course, I know the modern practice is to envelope the limb in cotton wool or cotton batting, and then to apply the plaster over that. But this method is open to Dr. Hamilton's objection, that it leaves too much space and permits too much motion in the splint.

If a properly applied plaster splint is cut open in a straight line and sprung off the limb, and then the cut edges brought accurately together and held in place by a dry bandage over the whole, and then the empty splint filled with plaster of the proper consistency, the result should be an absolutely perfect cast of the limb itself. Indeed, many such casts were made in the hospital of limbs and feet and joints, and they showed the presence or absence of deformity almost perfectly.

A plaster splint may be made perfectly light and comfortable by using in its construction zinc or tin strips, about one-half inch wide and of the proper length. Holes should be punched in the strips first from one side and then from the other, with a pointed punch, at intervals of an inch and a half, in order to get a surface that will make it hold its place firmly in the splint.

The object of such reinforcement is to give lightness with the requisite degree of strength, and the principle of such reinforcement is exactly the same as the steel reinforcement in concrete construction. Four, five, or six such strips may be placed around the limb after the first layer of plaster has been applied, at regular intervals, and incorporated with the plaster as the bandage is continued about the limb.

In the treatment of compound fracture of the long bones of the lower extremity, so far as I know, nothing can take the place of Plaster of Paris. The practice in the Hospital was about as follows: Of course, we knew nothing about the existence of any pyogenic bug, but in spite of that fact an occasional glimmer of light would make its way into our conscious intellects, and we did try to cleanse and sterilize the wound with such antiseptic solutions as we had, principally carbolic acid, and as thoroughly as possible. Then the fractured bones having been reduced, the external wound was closed hermetically with absorbent cotton and collodium and a plaster splint was immediately put on, proper allowance being made for any undue swelling.

A fenestrum was at once cut in the splint over the wound so that it might be examined and dressed as required. Now, in order that the drainage and dressing of the wound might not soil the cut edges of the fenestrum, they were rendered impervious by a covering of oil silk and shellac, and in order that the drainage and solutions used in dressing the wound might not soak under the splint, absorbent cotton was tucked under the edge of the fenestrum between the skin and the splint, sufficiently tightly to keep out all moisture. If the wound in the soft part showed a disposition to progress favorably, the hermetical sealing was left in place and the case treated as a simple fracture. On the other hand, if excessive swelling took place and interruption to the circulation became threatened, the splint was cut straight through on its anterior aspect, and sufficiently sprung open to permit the circulation to become freely re-established. Then, as the swelling subsided, the cut edges of the splint were slowly drawn together again day by day and held in place by a dry bandage over the whole.

Now, all this may sound a little crude, in the light of modern antiseptic practice, but many excellent results were obtained in spite of the fact that the treatment was carried out in an old hospital, saturated from foundation to coping stone with every infection known to hospitals.

Of course, we sometimes struck a snag, and suppuration and burrowing abscess developed with sepsis and loss of limbs, and I imagine similar results show up occasionally even in this day and generation.

Plaster of Paris dressings for fracture of the bones of the lower extremity were almost invariably done under an anesthetic, extension and counter-extension being maintained

while the splint was being applied by mechanical appliances specially devised for that purpose.

In the case of fracture of the femur, the patient was generally up and about the ward, on crutches, of course, on the fourth or fifth day after the dressing of the fracture. I have spoken of the rivalry existing between the surgical divisions as to results, and results of fracture of the femur were almost invariably good. But I have yet to see a case of fracture of the femur in which some degree of shortening did not show up in the result.

In the upper extremity all fractures of the fore-arm, including fractures through the elbow joint, and fractures of the lower half of the humerus, were successfully treated with Plaster of Paris dressing. The exceptional fracture, in which I think other forms of dressing are superior to Plaster of Paris, are fractures of the upper half of the humerus and fractures about the shoulder joints, and the dressing that most strongly appeals to me for such fractures, is one that so far as I know was devised by Dr. David Barrow, in which he makes the chest wall serve as the internal splint by binding the arm to the chest with adhesive strips or bandage as the case may be.

There are still other conditions in which Plaster of Paris has been used with marked success. There is no better dressing, for the fixation or immobilization of an inflamed joint than a light plaster splint reinforced with zinc strips.

Plaster of Paris may also be used in the form of a jacket, in the treatment of Potts Disease of the Spine—and where the trouble is located at a favorable point in the spinal column, and before suppuration and Psoas abscess have resulted there is certainly no more ideal method for meeting the requirements of the case than the plaster jacket.

When I speak of the favorable location of the disease in the spinal column, I of course mean that it must be located at a point where the pressure and weight of the upper portion of the body on the diseased bodies of the vertebrae may be relieved by the jacket. Practically, that would include the dorsal and lumber vertebrae, and fortunately, that is the region of the spine most frequently affected by the disease.

I have been asked so frequently to relate my experience with the plaster jacket in the treatment of Potts Disease of the Spine, that I am induced to take advantage of the present opportunity to give you some kind of an account, at least, of the first case in which I made use of it.

Of course, you all know that formerly the practice in such cases was to put the patient in the recumbent position in bed, on a perfectly smooth, firm mattress, not even permitting a pillow or bolster under the head, and to keep him or her in that position until the disease was relieved or the patient died, a termination, which, by the way, was not very uncommon.

In the late spring of 1874, and when I was senior assistant on the first Surgical Division of Bellevue, one of my colleagues, Dr. Arnold, an interne on a medical division, asked me to take charge of a girl 14 or 15 years of age, a servant in his home in the city, and do what I could for her relief. She was suffering from Potts Disease of the Spine, and the eighth, ninth and tenth dorsal vertebrae were involved in the trouble. There was a distinct angular deformity and she suffered constant pain when in the erect or sitting position. In other words, she was practically bedridden.

Well, now, this was one of those occasions when a ray of light made its way into my conscious intellect, and it occurred to me that if I could get that girl onto her feet and into the open air her chances for recovery would be decidedly improved.

In view of the fact that the case had been referred to me, my House Surgeon had given me *carte blanche* in its management.

So, with the aid of the hospital carpenter I succeeded in devising a suspensory apparatus, which consisted of a hook fastened in the ceiling, blocks and tackle, and soft, ring-like pads to catch under the arms. One of the hospital nurses had made a flannel jacket and put on the girl in bed, which fitted just like the skin. With my patient seated on a stool directly under the suspending apparatus, I took just enough of the weight of the upper portion of the body from the diseased bone to relieve her of pain, no effort being made to correct the deformity; and in that position I applied a Plaster jacket extending from the axilla to the pelvic bones and taking firm hold of the latter. This jacket was made quite light and strong by a reinforcement of zinc strips, exactly as whalebone or steel strips are used in the construction of the corset. Light pads of cotton wool may be placed over the bony prominences of the pelvis if thought necessary.

Through my anxiety to obtain a favorable result, and establish the value of the plaster jacket, I did many things for that girl which in the management of future cases were cut out.

For instance, I cut a fenestrum over the deformity and placed a seton in the skin to one side of it. On the third or fourth day after the application of the jacket, the girl was on her feet and about the ward, the pain

in the erect position having been relieved by the support furnished by the jacket.

She was kept constantly in the open air, provided with a special diet, had constructive tonics, and I recall one medicament, to which I ascribed much benefit, the Lacto Phosphate of Lime. I do not believe that modern pharmacy has ever furnished the profession with a better preparation of lime than Lacto Phosphate.

In six weeks or two months' time, her enlarging breasts and the rolls of fat over the edges of the jacket necessitated its removal and a second was re-applied, which she continued to wear to the end of treatment. Within six months she was well, and to my surprise, with considerable reduction of the angular deformity. She remained well at least up to the time I left New York City in April, 1875. So far as I know, this was the first case where the Plaster Paris was used for the relief of Potts Disease.

Dr. Virgil P. Gibney, in the Hospital for the Ruptured and Cripple, and Dr. Lewis A. Sayre of New York City, used it in many cases with good results and did much to popularize it.

With this brief account of the Plaster jacket, I close this paper, less the garrulity, which is so invariably the attendant of age, should wear you to a frazzle.

A FORM FOR PERIODIC HEALTH EXAMINATIONS.

By Irvin Lindenberger, Louisville, Health Officer of Jefferson County.

Preventive medicine has been looked upon by the general public for many years as a function of Health Departments; and pertaining to such matters as general sanitation, a pure water and milk supply, efficient drainage, removal of public nuisances and the spread of communicable diseases. With the advent of physical examination of school children, health centers, tuberculosis, child welfare, pre-natal and other clinics the former conception is rapidly changing. As a matter of fact the former conception has been largely responsible for retarding the progress of the prevention of disease in the individual man, woman, and child. We have never applied to the individual the medical knowledge which we already possess for the preservation of health and the arrest of the beginning of disease.

The general public are anxious and desirous, with the little knowledge they now have, to acquire more. Health talks in the daily newspapers and magazines are eagerly read by large numbers. It lies with the general practitioner to render the major part of this service between scientific research and popular need. It is he that will be the bulwark between scientific medicine and the quack, including the various non-scientific cults already and increasing in our midst. It will be he that will deal the death blow to the spectre which seems to be haunting the minds of so many medical men throughout the United States, that monster, called State Medicine.

And how will he accomplish this? The experiment, if tried in the following manner, I think will be well worthy of trial. Instead of the ordinary, let me see your tongue, let me feel your pulse, examination, follow the suggestions and questions on the form contained in this paper, or a similar one. Make a list of your patients that you are not actually attending now on the sick list. Write them a letter informing them you want to see them at your office. Bring to their attention when they do come in you want to sell them the idea of health. Tell them you want to make a thorough physical examination, an examination from head to foot, an examination that they feel is thorough, that they will talk and tell their friends about. Other salesmen are calling upon them weekly. You should sell them the most important thing in the world—health practices and health habits. With such an examination, is impressed upon them the idea of increased efficiency and increased earning power. Later on this will lead to an annual contract and you will receive more income from well people than from the sick. And besides that you will have the pleasure of knowing that you have saved lives and prevented sickness, agony, and pain, in addition to having been a real benefactor to the human race.

The public is not interested in the ethics of the medical profession, but it is important that the physician remember the principles of ethics, crystalized as the result of correct professional practices, is a constructive guide for professional conduct, and not a dead thing. They are interested in maintaining their own health. That is why the quacks and non-scientific cults easily get a following by adopting salesmanship methods. And the medical men have left their patients so uninformed in reference to scientific care of the human body that they become an easy prey for them. The largest Life Insurance Company in the World recognizes the value of periodic health examinations, as well as other companies, and through the Life Extension Institute of New York City have decreased their death rate and naturally increased their yearly premium account.

It is realized that this form is not complete, but it is hard to formulate one for each indi-

vidual medical opinion. It will be taken up very briefly in detail. The Family Record sheet may be filled out by the individual himself. It saves time and gives the individuals own expression of opinion. Under meat, the ordinary fresh butchers meat is meant to distinguish from ham, bacon, etc. Under the Medical Report the following suggestions are freely used from "How to Live" by Irving Fisher of Yale University and Dr. Eugene Lyman Fisk of the Life Extension Institute. After 35 years of age the average individual, as age progresses, gains weight until he reaches old age, when the weight usually decreases. This movement of weight is so universal that it has been accepted as normal, or physiological, whereas it is not normal, and is the result of disease-producing and life shortening influences. The standards for weight have been established by life insurance experience, but they by no means, as weight increases with age, reflect the standards of health and efficiency, and the death rate is far above those people of the best physical type who live a thoroughly hygienic life. It takes a "lean horse for a long race," and after thirty the weight should be watched and kept at approximately the average weight for age 30. The average weight of clothes of an adult is about 4 pounds, in women about 3 pounds, both including shoes. In overweight the main reliance should be upon dietetic regulation rather than exercise. Starches, sugars and fats are to be principally avoided, and with regulated exercise the outcome is certain. Underweight is often due to irregular habits of eating and sleeping and lack of regular exercise. If no physical defect as a causative factor exists, eat freely of fat forming foods.

Vision is tested with the ordinary Snellen's Test Type, a card can be obtained free of cost by writing the Kentucky State Board of Health, 6th and Main Streets, Louisville, Kentucky. Defective vision should be corrected by glasses prescribed by a competent specialist.

In the examination of hearing many cases will be found to be impaired from the collection of wax in one or both ears.

Tonsils, if mechanically causing obstruction, or the causative factor in recurring sore throat, or if suspected to be the seat of a focal infection, by symptoms referable to other portions of the body, of which "rheumatism" is a common one, should be referred to a competent physician for removal.

Regarding the teeth, tartar and decomposing material tend to collect on the root of the tongue and are more often responsible for foul breath than stomach conditions. Scrape the root of the tongue and note whether there is odor from the scraping. Cleanse with the tooth brush, and taking care not to hit the roof of the mouth, gagging is prevented. Prolonged treatment of infected teeth where systemic disease is present is hazardous. Extraction is the safer course. Dead teeth, are always points of least resistance. Be suspicious of crown or devitalized teeth, see a competent dentist, and have X-rays used.

High blood pressure may be temporary, but should be watched and life regulated, avoiding physical and mental over-strain and dissipation. Avoid stimulants, tobacco and overeating.

If the apex is outside the nipple line it may denote hypertrophy. Examine carefully.

Any rales above the nipple line with loss of weight, etc., should many times be treated as pulmonary tuberculosis.

Pain rather than discomfort as regards the stomach is most often organic, i. e. malignancy or ulcer.

Constipation and lack of exercise are often the cause of hemorrhoids.

Hernia is usually a surgical measure. Varicocele the same, the use of a suspensary bandage may benefit the latter.

Varicose veins can be supported by a bandage or elastic stocking and at times removed by operation.

Many nervous diseases are caused by physical conditions which should be sought for and cured by a thorough medical examination and treatment. This is most often the class of patients that resort to the newer cults, usually because of a faulty or not a thorough medical examination.

Aside from deformities most foot troubles are due to improperly fitting shoes, lack of exercise and weakness of the muscles in the fore part of the leg that support the arch of the foot. The arches found in some stores will not correct flat foot. They merely act as crutches. Painful feet may be due to infection in tooth sockets or tonsils. Mere flatness of the foot without pain or deformity may be of no importance.

Endocrine disturbances can at times be confirmed as regards diagnosis by advanced laboratory methods.

Regarding women, especial attention is invited to the fact that much neglect has been shown in the care of women during and after pregnancy. Mortality statistics show the lack of prenatal instruction and after treatment.

Typhoid Fever is most common in Kentucky. Inoculation should be done in those drinking any suspected water or milk. The Kentucky State Board of Health will supply, free of cost, vaccine for this purpose.

Pathological conditions of the urine demand frequent examination with careful

FAMILY RECORD

FATHER	AGE	HEALTH	DEAD	CAUSE
MOTHER	AGE	HEALTH	DEAD	CAUSE
BROTHERS	AGE	HEALTH	DEAD	CAUSE
SISTERS	AGE	HEALTH	DEAD	CAUSE

STATE WHETHER YOU EAT, MODERATELY (M) FREELY (F) OR SPARINGLY (S) OF THE FOLLOWING ARTICLES

MEAT	FRUIT	POTATOES
BREAD	FRESH MILK	EGGS
VEGETABLES	CHEESE	SALT
FOWL	FISH	BUTTER
SWEETS	PASTRY	

NUMBER OF HEARTY MEALS (State which)

DO YOU EAT RAPIDLY, SLOWLY OR IN AN INTERMEDIATE WAY?

HOW MANY GLASSES OF WATER DO YOU DRINK DAILY?

HOW MANY OF THESE AT MEALS?

HOW MANY CUPS DO YOU DRINK DAILY OF TEA, COFFEE?

TOBACCO? HOW MUCH DAILY AND THE FORM.

Cigars **Pipe**

Cigarettes **Chewing Tobacco**

DO YOU SLEEP WELL? HOW MANY HOURS?

IN A WELL VENTILATED BEDROOM WITH WINDOWS OPEN?

HOW MANY HOURS DO YOU WORK EACH DAY?

DO YOU FOLLOW ANY SPECIAL PURSUIT OR RECREATION ASIDE FROM BUSINESS?

DO YOU SECURE REGULAR DAILY EXERCISE?

IS IT IN THE OPEN? HOW?

ARE YOU NERVOUS OR APPREHENSIVE ABOUT YOUR HEALTH?

DO YOU SUFFER FROM HEADACHES? IF SO HOW OFTEN?

SEVERE, MILD

DO YOU OFTEN TAKE HEADACHE POWDERS OR PATENT MEDICINE FOR ANY CONDITION?

ARE YOU CONSTIPATED?

HOW OFTEN DO THE BOWELS MOVE FREELY?

DO YOU USE LAXATIVES OR PURGATIVES FREQUENTLY?

DO YOU NOW SUFFER OR HAVE YOU EVER SUFFERED FROM THE FOLLOWING TROUBLES?

VERTIGO OR DIZZINESS?	VOMITING OF BLOOD?
RHEUMATISM OF JOINTS?	PAIN IN REGION OF HEART?
SEVERE ABDOMINAL COLIC?	ACID DYSPEPSIA (SOUR STOMACH)
DISCHARGE FROM EAR?	OTHER STOMACH OR BOWEL TROUBLES?
FREQUENT COUGH OR COLDS?	CHRONIC SKIN DISEASE?
FREQUENT OR DIFFICULT URINATION?	SYPHILIS?
BLOOD SPITTING (LUNGS)?	RUPTURE?
SHORTNESS OF BREATH?	GONORRHEA?

OTHER SERIOUS DISEASE OR INJURY

NAME OF DISEASE NUMBER OF ATTACKS.

STATE DATE, DURATION, SEVERITY AND RESULTS.

IS YOUR HEALTH NOW IN ANY WAY AFFECTED? IF SO, STATE PARTICULARS.

MEDICAL REPORT ON

AGE TEMP. HEIGHT WEIGHT

Recent loss lbs.

Should weigh lbs. Recent gain lbs.

CHIEF COMPLAINT

VISION RT. HEARING RT.

VISION LEFT HEARING LEFT Inspection drum canal

Whispered voice at 10 ft. (Back turned)

NOSE, THROAT, TONSILS

Indicate whether to degree needing attention.

MOUTH, TEETH,
GUMS, TONGUE

Infected gums, number of crowns, carious teeth, coated tongue, etc.

PULSE B. P. Systolic Diastolic

HEART. Sounds. Murmur Irregular Intermittent

Apex (in or outside nipple line?)

LUNGS.

Rales, dullness or other signs, History of:—Cough, Hemoptysis, Temp., Night sweats, Pleurisy, Asthma, Bronchitis.

STOMACH AND ABDOMINAL ORGANS

Pain, discomfort, enlargement (liver, gall bladder, appendix, umbilical, hernia)

HEMORRHOIDS? Internal External Bleeding HERNIA? VARICOELE? RECTUM

PROSTATE VARICOSE VEINS

BRAIN AND NERVOUS SYSTEM

Pupillary reflexes, Romberg, deep reflexes, tremors, speech, etc.

FEET

Remove shoes, note degree, flat foot, bunions, faulty shoes, etc.

ENDOCRINE GLANDS

Goitre, exophthalmos, circulatory disturbance, etc.

LYMPHATIC SYSTEM

Note enlarged lymph nodes, possible source of infection, specific?

SKIN

Dryness, clamminess, eruptions, scars, firm?

MUSCLES Flabby, Firm.

Vaccinated, Small Pox? Inoculated, Typhoid?

QUESTIONS RELATING TO WOMEN: Children, Living, Dead. Miscarriages Menstruation.

Pelvic or mammary disease, past or present.

URINE:

Sp. Gravity Microscopical Turbid

Albumin Reaction Possible Cause

Acetone Sugar

OUTSTANDING FEATURES

Are further investigations necessary, if so, what?

Eating, drinking, smoking, sleeping, working, playing, exercise, occupation, etc.

SPECIAL NOTES: OTHER EXAMINATIONS

Laboratory or otherwise.

Date _____Examined by _____

medical supervision as regards diet and treatment.

The Kentucky State Board of Health offers the service of its laboratory, free of cost, to any physician in the state to further the prevention of disease or for diagnostic purposes. Those physicians so desiring can forward the completed examination blanks to the Board at Louisville where they will be passed on by an appointed Board of Consultants, and their opinion mailed after consultation.

Blanks can be obtained from Masonic Home Printing Company Louisville, or the County Health Officer, Louisville. The price is $2.50 per hundred.

WOMEN

Height	19 Yrs.	20 Yrs.	21-22 Yrs.	23-24 Yrs.	25-29 Yrs.	30-34 Yrs.	35-39 Yrs.	40-44 Yrs.	45-49 Yrs.	50-54 Yrs.	Yrs.
4 ft. 10 in.	98	102	106	110	113	116	119	123	126	129	
4 ft. 11 in.	103	107	109	112	115	118	121	125	128	131	
5 ft.	109	112	113	115	117	120	123	127	130	133	
5 ft. 1 in.	113	115	116	118	119	122	125	129	132	135	
5 ft. 2 in.	116	118	119	120	121	124	127	132	135	138	
5 ft. 3 in.	120	121	122	123	124	127	130	135	138	141	
5 ft. 4 in.	123	124	125	126	128	131	134	138	141	144	
5 ft. 5 in.	126	127	128	129	131	134	138	142	145	148	
5 ft. 6 in.	129	130	131	133	135	138	142	146	149	152	
5 ft. 7 in.	131	133	135	137	139	142	146	150	153	156	
5 ft. 8 in.	135	137	139	141	143	146	150	154	157	161	
5 ft. 9 in.	138	140	142	145	147	150	154	158	161	165	
5 ft. 10 in.	141	143	145	148	151	154	157	161	164	169	
5 ft. 11 in.	145	147	149	151	154	157	160	164	168	173	
6 ft.	150	152	154	156	158	161	163	167	171	176	

All tables prepared by Dr. Thomas D. Wood and included through courtesy of the Child Health Organization.

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MEN

Height	19 Yrs.	20 Yrs.	21-22 Yrs.	23-24 Yrs.	25-29 Yrs.	30-34 Yrs.	35-39 Yrs.	40-44 Yrs.	45-49 Yrs.	50-54 Yrs.	55-59 Yrs.
5 ft.	107	110	114	118	122	126	128	131	133	134	135
5 ft. 1 in.	112	115	118	121	124	128	130	133	135	136	137
5 ft. 2 in.	117	120	122	124	126	130	132	135	137	138	139
5 ft. 3 in.	121	124	126	128	129	133	135	138	140	141	142
5 ft. 4 in.	124	127	129	131	133	136	138	141	143	144	145
5 ft. 5 in.	128	130	132	134	137	140	142	145	147	148	149
5 ft. 6 in.	132	133	136	138	141	144	146	149	151	152	153
5 ft. 7 in.	136	137	140	142	145	148	150	153	155	156	158
5 ft. 8 in.	140	141	143	146	149	152	155	158	160	161	163
5 ft. 9 in.	144	145	147	150	153	156	160	163	165	166	168
5 ft. 10 in.	148	149	151	154	157	161	165	168	170	171	173
5 ft. 11 in.	153	154	156	159	162	166	170	174	176	177	178
6 ft.	158	160	162	165	167	172	176	180	182	183	184
6 ft. 1 in.	163	165	167	170	173	178	182	186	188	190	191
6 ft. 2 in.	168	170	173	176	179	184	189	193	195	197	198
6 ft. 3 in.	173	175	178	181	184	190	195	200	202	204	205
6 ft. 4 in.	178	180	183	186	189	196	201	206	209	211	212
6 ft. 5 in.	183	185	188	191	194	201	207	212	215	217	219

Intestinal Bilharziasis in West Indies.—Jones cites cases of intestinal bilharziasis in which he found the characteristic later spined ova of Schistosomum mansoni. Ova of other parasites were also present, chiefly Ascaris lumbricoides and Trichuris trichiura. About twenty-four cases in all have been seen, in each of which the diagnosis was arrived at after microscopic examinations. Certain symptoms of the disease are not unlike those of hookworm infection as seen in the Southern United States. Beyond directions as to prophylaxis of the water supply—boiling drinking water and exposing that used for bathing to the sunlit for a day—and treatment with emetin hydrochlorid, in a few instances, no active curative measures were undertaken. Where ascarides were present, oil of chenopodium was most effective in ridding the host of these and at the same time ameliorating the symptoms of gastric distress caused by the bilharzial parasites. Intravenous injections of tartar emetic were not attempted as the patients were not sufficiently under control.

Influence of Light on Stability of Colloids of Human Plasma.—Starlinger found that the amount of fibrinogen precipitated from a citrated plasma is diminshed afted addition of eosin or ferrous sulphate andexposure to light (especially short waves). The phenomenon is less pronounced with globulins, and still less with albumins. Starlinger believes, that this stabilization of colloids is due to the partial hydrolysis of the proteins by a transfer of oxygen by means of the catlyers.

SUGGESTIONS TO PHYSICIANS HOLDING CHILD HEALTH CONFERENCES OR SEEING WELL CHILDREN IN THEIR OFFICES.

By Juanita McF. Jennings, M. D., Lynch.
Bureau Child Hygiene, Assistant Director.

The time was when the physician saw the sick child only, and frequently unless the child was seriously ill the mother and the neighbor women administered the time honored home remedies and did not consult the doctor. Through the educational work done by baby departments of magazines, through child welfare programs of women's clubs, through the teaching of health nurses and health units, Child Health Centers and the Health Crusade work of the public school child, who takes his lessons home to his mother, the mothers of this generation are fast coming to a realization that preventive medicine means more to them than curative medicine. Also, that it is better for both mother and child to keep the baby well for well babies do not die.

The Bureau of Child Hygiene is endeavoring in every possible way to assist the mothers of Kentucky in keeping their children well. The Bureau has available for distribution charts of child feeding, beginning with the day old baby and ending with the six year old child. Instruction cards for the preparation of foods and other literature may be obtained from the Bureau. The work of the prenatal clinics will give the baby the best possible chance for a good start in life; he will be given the best opportunity for growth and development before he comes into the world and will have "a mother living and well" to care for him after he arrives here. The Bureau has also a series of letters for expectant mothers; in these she is urged to see her family physician early in pregnancy, to be examined and have prenatal care, and to return to him about six weeks after confinement for examination. Leaflets on prenatal and postnatal care, home deliveries and care of the baby may be gotten from the Bureau.

The following suggestions are made as an outline for the physician to use in the Child Health Conference or in seeing well children in his office. The mother is urged to bring the child to the physician at least once a month for an examination and advice relative to his health habits. In visiting Child Health Conferences in various states one is impressed with the lack of uniformity in conducting such conferences. Too frequently the physician simply looks at the child and says to the mother, "Well, well, Mrs. B..... this is a fine baby you have. How is he getting along? He seems to be all right, just keep him going as he is and I am sure you will have no trouble with him." The baby may look all right, but the mother, in the majority of cases, will need detailed instructions regarding his care, and who should know best how to give her wise advice but her physician?

1. Family and personal history.
2. Physical Examination:—

Child should be weighed and measured at least once a month. (A progressive gain in weight in the infant and older child is the best index to his maintained health.) If a baby, undress for physical examination; if an older child remove clothing to the waist. Note general appearance and nutrition.

1. Head—Note shape and closure of fontanelles.
2. Mouth—Teeth and gums (How many adults have realized too late the loss of the six year molar, a permanent tooth, "the keystone of the jaw.")
3. Eyes—Note especially conjuntivitis, trachoma and strabismus, etc.
4. Ears—Note discharge and history of earache.
5. Throat—Enlarged or diseased tonsils.
6. Glands.
7. Heart and lungs.
8. Back—Note spine.
9. Abdomen—Note abdominal distension or masses and hernia.
10. Genitalia.
11. Skin.
12. Rickets, enlarged epiphyses, bow-legged, flat feet.
13. Nervous System.
14. Posture.

Advice should be given the mother regarding the health rules the child must obey. Often the child is found to have no physical defects, yet he is underweight, is fretful and not a well child, and the cause is easily found to be his violation of simple health rules. The chief causes of underweight in the growing child are over-fatigue and lack of rest. The child is too often burdened with work after school hours, or social activities beginning too early in life deprive him of needed sleep and rest.

1. Regularity: — Of all the health rules, regularity is the one most often broken. From the day the child is born he must be taught regular habits by the clock. He should be fed at a regular time, and at regular intervals. He should have his bath at a regular time. He should play and exercise at a regular time and sleep at a regular time. Many a mother when asked how often she feeds the baby will reply, "Oh, I feed him

when he wakes up or cries," or if it is an older child her reply will be, "He has no appetite, he won't eat his meals, he just lunches all day long."

2. Correct Food:—The correct food for a child is the right kind of food at the right time for the right age. Of all foods for babies, nothing equals his mother's milk. With good prenatal care and a regulated diet, the majority of healthy mothers can nurse their babies. The baby should not be allowed to suck his thumb or fingers. The use of pacifiers and "sugar teats" is a most vicious habit, and the physician should advise the mother against these, and tell them why. In a recent Child Health Conference two children were observed to be sucking their fingers, and one mother with a crying infant was soothing it gently with an old fashioned "sugar teat." The nurse and the doctor calmly looked at the mother, as she endeavored to quiet the child, but they said nothing and were busy with other children when the baby pushed the sugar bag out of its mouth and the mother picked it off the floor and replaced it in the child's mouth. In some cases it may be necessary to use modified cow's milk as a supplementary feeding in the afternoon when the mother is fatigued from the stress of the day, but all mothers should be urged to nurse their babies. This is best done with the mother lying down for twenty minutes at each feeding, the baby nurses better this way and the mother will have had about two hours rest during the day. Modified cow's milk is the best substitute for the mother's milk. At three months of age add the fruit juices, at six months, the cooked cereals and green vegetables. At the tenth month give him whole milk, as this food makes the best teeth, bone and muscle. The green, leafy vegetables, fruit juices, with milk, butter and eggs are all rich in vitamines and are essential for the development of the child. He should have no food between meals, no greasy foods, and but few sweets, these to be given only after meals. Tea and coffee are to be forbidden, they over stimulate. It has been found that the bed-wetters are usually coffee drinkers.

3. Play, Exercise And Rest :— The child should have play and exercise in the fresh air. If the weather is too bad for him to go outside, open the window in his playroom, or dress him warmly and put him on the porch. The growing child must have rest periods, up to six years of age he should rest, lying down for two hours at least each day, either before or after dinner. Whether he sleeps or not, see that he lies down in a well ventilated room. As a usual thing when a child becomes quiet he falls asleep. The child of school age should rest when he returns from school before he goes out to play or attend to his chores around the home. Doctors cannot emphasize too strongly the great importance of rest for children.

4. Care Of Teeth:—A small child can learn to brush his teeth. The mother should see that he washes his teeth at least once a day and that he has his own tooth brush. The first teeth of the child should be cared for and filled if necessary. *Save the six year molar.*

5. Bowel Movement:—Impress upon upon the mother that the child must be taught regularity in going to the toilet. This will go far in after life in preventing constipation. The small child should be taught to use a small commode, and the use of napkins on a child two or three years old thus avoided. A mother will need a little time and patience in teaching these habits, but she will save herself much work and will prevent the child from forming the habit of bed-wetting.

6. Sleep:—The growing child requires long hours of sleep with the windows open, and he should sleep alone. The practice of taking small children to the movies every night, of letting them set their own bedtime, or stay up until their parents retire, cannot be too strongly condemned. The lack of sleep is frequently the chief cause of underweight. The small child should be in bed by seven o'clock and the school child by eight.

7. Bath:—The baby and older child should have a daily bath. In cold weather when there may be some difficulty in having a warm room and the mother objects to bathing the child because it may catch cold, it is best to advise her to bathe him at night before he is put to bed. Children usually are delighted with the bath hour and a child four years old can practically bathe himself if the mother assists him with the difficult spots. Young children should be taught to wash their faces and hands before meals and to clean their finger nails.

8. Excitement:—Few mothers seem to to realize that the nervous system of the child is more delicate than that of the adult. He is easily stimulated, a slight toxemia will cause him to have a high temperature and convulsions. Over-fatigue will cause him to have indigestion, sleeplessness, fretfulness and general irritability. The father returns from the day's work and begins to entertain the baby. He is tossed in the air, thrown up and down, turned upside down and apparently the rougher he is handled the more he enjoys it. The father tires of amusing him, and when the baby is put in his crib to sleep the parents cannot understand why he cries all

night and expects his father to walk the floor with him. Excitement is often the cause of colic and inability to sleep. The child should not be excited by noisy play or amused all his waking hours, his toys should not be of the noisy type, he should be kept from noisy places and spoken to in a quiet, gentle voice. A quiet, peaceful atmosphere is necessary for the development of a stable nervous system. The importance of happiness in the child's life should be stressed to the mother. She should require of him immediate obedience, thereby avoiding nagging, to which is due in many homes the unhappy atmosphere. Especially should nagging be avoided at the table, too often the child is nagged about his food and other family difficulties and he becomes so unhappy that food is distasteful to him.

That Child Health Conferences do lower the death rate of the children of a community is quite apparent, if such conferences are conducted over a period of time. Since 1917 the Louisville Public Health Nursing Association has conducted conferences, and in 1922 cared for one fifth of all the babies born in Louisville. In a recent report of this organization the death rate for 1922 was 17 per 1,000 for babies under one year of age. The Vital Statistics Bureau gave the death rate for babies of the same age in Louisville as 81 per 1,000. The fifth of the babies of the city cared for by this organization lowered the total city death rate, and if this had not been the case the death rate for children under one year of age would have been very much higher.

Fortunate are the mothers who are in contact with the wise physician who is teaching them the value of prevention, the need of healthful living and the simple rules of good health. These physicians throughout the State are co-operating with the Bureau of Child Hygiene in establishing Child Health Conferences. To these men has come the realization that the wealth of Kentucky is not in her famed Blue Grass or the vast coal lands of her Eastern mountains, but that it is in her child life. Let us not lag in this piece of worth while work—the producing of physically fit American Citizens.

Nature of Striocerebellar Tremor.—Hunt postulates the existence of a combined form of organic tremor caused by the involvement of separate neural mechanisms. There are recognized combined forms of palsy, central and peripheral, pallidal and pyramidal, as well as combined forms of sensory disturbances due to simultaneous involvement of more than one system. In this category Hunt would place the striocerebellar tremor.

NOTES ON THE ARTHRITIDES*

By Sidney J. Meyers, Louisville

The object of this short paper is to bring before you for discussion the question of greater accuracy in the diagnosis of the various types of arthritis. There is probably no single disease affecting the osseous system for which the physician is oftener consulted than arthritis, the reason for this being that the principal manifestation is usually pain which causes the patient to seek relief.

We must necessarily have a proper division of the different forms of arthritis before we can arrive at correct conclusions as to the causative factors with consequent institution of adequate means of therapeusis. We shall not discuss the traumatic arthritides as they distinctly belong within the domain of the surgeon. Moreover, these types should not be difficult of diagnosis provided careful anamnestic and clinical inquiry be made. Of course it must be remembered that trauma may cause an acute exacerbation in any type of arthritis. For our present purpose the arthritides may be divided into the following groups:

Group One

The first group includes the joint involvements occurring in acute rheumatic fever. In this type of infection we have the clinical phenomena of rheumatic fever with its typical course, and the joint involvement subsides with the neutralizing of the infection. Rarely, if ever, in acute rheumatic fever is the joint permanently disturbed; therefore the arthritis seen in acute rheumatic fever, beyond immobilization during the attack, requires little consideration or treatment.

Group Two

Group two embraces all the acute infectious arthritides, a large and interesting group of cases to which physicians have recently devoted much attention. The group may be separated into several subdivisions: (1) The arthritides which follow acute infectious diseases, due to circulation within the body and lodgment in the joints of the specific organism or toxin of the initial disease. These cases are noted following such diseases as scarlet fever, pneumonia, measles, typhoid fever, etc. (2) Those cases in which the joints are involved because of the presence of some specific organism, such as the gonococcus of Neisser or the spirochaete pallidum. (3) Those cases in which focal infection or an infectious process of obscure or unknown origin, causes an acute inflammation of the joints. So much has been written about arthritis due to focal infection that the focal areas, the importance of careful localization

*Read before the Louisville Medico-Chirurgical Society Nov. 10, 1922.

and elimination, the results which have been obtained, etc., need hardly be discussed. The teeth, tonsils, gall bladder, appendix, gastro-enteric tract, the accessory sinuses, the nose, the middle ear canal, and many other anatomic areas have been justly or unjustly accused of being the sites of infective foci. In all these cases the joint changes are usually temporary in character and will be found to subside, the joint practically returning to normal, after elimination of the focus of infection.

Group Three

The next group includes the chronic arthritides which are usually sequelae to the acute infectious types already described. In this group we may include the villous and also the atrophic form which some writers have designated as arthritis deformans; again we may have an hypertrophic type or osteoarthritis where bony outgrowths cause ankylosis of the joints and of the bones of the spine. In chronic forms of arthritis, as would naturally be expected, the joints are disturbed because of bony changes, and this is true in the atrophic variety as well as in the hypertrophic. It is in the chronic cases, even though we may believe they are the outgrowth of the acute infectious types and most often owe their origin to focal infection, that I wish to state very little can be promised by removal of the focus of infection, because serious damage to the joint structures has already occurred. While it is true that we may arrest the infectious process, yet we are unable to correct the atrophic or hypertrophic condition of the joint.

Group Four

The fourth group embraces the so-called static arthritides as seen in fallen arches, from which many patients suffer, and in which the diagnosis is often long delayed. In this type pain is constant and locomotion difficult.

Group Five

The fifth group is represented by Still's disease, a rather rare condition occurring in children. There is always a polyarthritis accompanied by enlargement of the spleen and lymph glands. The disease owes its origin to an acute infection, and as in acute rheumatic fever, little can be accomplished by treating the arthritis until the infection has subsided.

Group Six

Group six embraces the metabolic arthritides, gout typifying this variety. I believe it would be well to consider the possibility of gout in all painful joints. Latterly we have been prone to discard gout from the category of joint affections, since we have been absorbed in the infectious origin of these conditions. It must not be forgotten that gout may attack any joint in the body, and it may also be acute or chronic in character.

Group Seven

The seventh group includes the trophic arthritides in which the joints become involved through organic nerve lesions. The so-called Charcot's joint and articular changes noted in tabes belong to this class. There should be little difficulty in diagnosis of these affections. Unlike other types of arthritis pain is never sufficient to attract much attention and there is no tendency toward ankylosis. Investigation of the clinical history will usually bring to light other signs of ataxia.

Group Eight

This group embraces all sacro-iliac joint disturbances. The pain in these cases is often sufficient to keep the patient in bed, and the disease deserves greater attention than it has hitherto received. Careful inquiry will sometimes reveal the fact that lumbago and many other obscure so-called referred pains are due to disturbance of the sacro-iliac joint. The diagnosis in these cases is often delayed because the patient is not examined with sufficient care.

Group Nine

Group nine consists of the painful heel, which is nearly always a periostitis with the production of a bony spur. The pressure from this spur causes the most terrific pain in the heel. Cases of this type are more common than we have heretofore believed. The diagnosis should not be difficult if the patient is carefully studied. In the majority of instances there is a history of Neisserian infection.

Group Ten

In group ten we will include syphilitic and tuberculous arthritides. These diseases may involve any joint in the body and resemble each other in many different ways. Differential diagnosis is usually made by consideration of the clinical manifestations and the history. In both diseases the joint involvement is more apt to be chronic than acute, both the synovial membrane and the joint structure being affected. No age is exempt and cases have been reported at both extremes of life. The Wassermann and von Pirquet tests may or may not show characteristic findings.

Diagnosis

In all the arthritides we have one method of diagnosis which should always be employed, and without which I believe we will fail in many cases to make a correct diagnosis, i. e., the roentgen-ray. With the proper application of radiography changes in the osseous tissues and also in the soft parts can be accurately determined, and in many of the

arthritides differentiation depends upon the character of the bony lesions. These can be determined as a rule by careful roentgenoscopic and fluoroscopic examination.

Treatment

The treatment of the arthritides must depend, of course, upon the causative factor in each case, and a detailed description of the various methods would be of little interest or value to the gentlemen present, for the reason that we are all agreed as to the treatment of the acute infections, the elimination of foci of infection, the importance of rest, immobilization, elimination, stimulation, and regulation of diet, the latter being especially important in the so-called metabolic type of arthritis.

DISCUSSION

George H. Heymann: The feature of greatest interest to me in the discussion of arthritis is the mouth as a focus of infection. There are two types of focal infection in the mouth which may be productive of arthritis: (a) apical abscesses of the teeth, and (b) pyorrhea alveolaris. It must be remembered that the epithelial covering of the gum tissue contains numerous papillae, and that each papilla is provided with an arteriole and venule; therefore, whenever there is disease of the gum or a pyorrhea pocket, it can be readily understood how infection may be carried into the blood stream and distributed to various parts of the body.

I happened to be in Rochester, Minnesota, when Rosenow finished some interesting experiments along the line of focal infections, and while the information is probably not new to the members of this society, I would like to present a brief outline. There had been in the hospital seven patients with arthritis and myositis in whom no cause for infection was found except apical abscesses of the teeth. Rosenow made cultures of pus from these abscesses and after extracting the pulp of a dog's tooth injected them into the tooth cavity. The dog later developed typical symptoms of arthritis and myositis. He then made cultures of pus from the dog's tooth abscess which he injected into the veins of four rabbits. When these rabbits were later opened every one showed lesion after lesion throughout the muscles and in the joints.

If I may be permitted to digress for a moment I would like to say a few words about renal calculus in relation to focal infection: I saw Rosenow open four other rabbits which he had injected with cultures made from a tooth abscess of a patient who had passed renal calculi. All the rabbits had renal concretions. He then injected cultures into a dog to see if he could produce renal calculi in the latter animal. Some time later one of the dog's kidneys was removed which contained several soft calculi. The animal afterward became ill and was killed. When the other kidney was removed post-mortem and opened it was found to contain several large calculi. He then injected cultures from the dog's tooth abscess into the veins of four rabbits. When later opened the muscles and joints of the rabbits were perfectly healthy, but each and every one showed calcareous deposits throughout the kidney. These experiments indicate that different strains of streptococci in tooth roots have special affinity for different organs of the body.

From my viewpoint this subject is of the greatest interest because of arthritis caused by infectious foci in the mouth and teeth. While it has many times been observed that arthritis subsided after removal of these foci, in some instances where the teeth seemed to be the focus of infection their extraction was not beneficial so far as the arthritis was concerned. Of course in such cases the focus of infection is located in some other part of the body.

Leon K. Baldauff: My experience has been that in rheumatic fever where the focus of infection was in the mouth (tooth abscess or pyorrhea alveolaris) relief quickly followed removal of the focus. There is nothing more remarkable in the practice of medicine than the rapidity with which joint pains disappear after removal of infected teeth or apical abscesses. While the results following tonsillectomy may be equally good they are not so rapid. Patients with rheumatic fever do not secure relief as quickly after tonsillectomy as after extraction of infected teeth.

A focus of infection often overlooked is the prostate gland. Nearly every man has had Neisserian infection and in a large percentage of cases the prostate is involved, and it seems strange that this focus has been so frequently overlooked. I now have under observation a patient with severe arthritis; his teeth were examined by the roentgenologist; his pyorrhea alveolaris was treated; his gall bladder was drained; but no benefit was secured. When I saw him he had an acute prostatic abscess. The fluid expressed by massage was yellowish in color and almost pure pus. After prostatic massage his conditions rapidly improved. A focus of infection in the prostate is often difficult to remove. I recall one case where the prostate was massaged week after week and no improvement of the arthritis was noted until after a urethral stricture had been dilated and proper prostatic drainage secured.

I recently saw a patient who had cervical arthritis. Careful search was made for a focus of infection in the teeth, tonsils, etc., and none found. I have adopted as a routine procedure, and believe it is a good one, to make a Wassermann test in all obscure cases; in fact, I do not consider any patient thoroughly examined unless a Wassermann test is made. In this case the Wassermann was four-plus positive. We had not suspected syphilis as the cause of the arthritis, and the Wassermann was made merely as

a routine measure. After a few doses of arsphenamin the cervical arthritis disappeared.

Another patient under observation at present has prostatic infection. He has severe pain in his shoulders and also marked cervical arthritis. The only focus of infection that can be found is a prostatic abscess. And I want to repeat that it has always seemed strange, that an infection which is so common as "gonorrhea" and which so frequently involves the prostate, that we so rarely suspect the prostate as a focus of infection in arthritis.

John Walker Moore: I agree with Dr. Baldauf about the frequency of focal infection in the prostate as a cause of arthritis. We see many cases of this kind in the city hospital on both the male colored and male white wards. These patients do not improve under any form of treatment until they are referred to the genito-urinary department where the prostate is massaged and the focus of infection removed. It is remarkable how quickly the arthritis subsides after removal of the focus of infection.

We have had considerable trouble with joint affections at the hospital, and the question is what sort of treatment should we give these patients? A large number of methods have been suggested and we have tried practically all of them. We have withdrawn fluid from the affected joint and injected it into the patient. In one or two instances this acted almost like magic. In one case particularly fluid was withdrawn from the joint on several occasions and injected into the patient, and within a week he was practically free of symptoms; but in other cases this method was not so successful. Some observers have advocated the injection of sterile milk. We have tried this and in some instances good results were secured; in others there was no response. Others recommend the use of various vaccines. We have tried all kinds, and I must say that so far we have failed to note any benefit from stock vaccines. I recall one case, however, where a good result was secured from autogenous vaccine. Thyroid extract has been administered, but we have seen no benefit from its use. I have never seen any improvement in joint affections under regulation of diet alone. The salicylates are always useful when given in moderate doses.

C. W. Dowden: In the treatment of arthritis we must consider the various types. In that group of cases in which infection can be traced directly to a focus of infection in the teeth or tonsils, the removal of this focus brings relief in a most dramatic way.

In chronic arthritis of the deformans type, little benefit can be expected from removal of foci of infection. The joint deformity and discomfort will persist after the removal of teeth, tonsils, prostate, etc. Several years ago bacteriologists advanced the theory that arthritis deformans was infectious in origin. The matter was thoroughly investigated at the time, especially by Billings, Rosenow, and several others, and various therapeutic measures recommended were used in many cases, but the results were not satisfactory.

A few years ago Pemberton, of Philadelphia, endeavored to account for the development of arthritis deformans on the basis of metabolic disturbances. He tested a large number of patients and concluded there was a disturbance of carbohydrate metabolism; that patients with chronic arthritis always showed a low sugar tolerance; that by giving them sugar and making two-hour tests they invariably showed a high blood sugar content. However, the important fact was overlooked that sugar tolerance differs materially in normal individuals, and that many normal persons show a low sugar tolerance. This is also noted in diabetes, renal disease, hyperthyroidism, severe infections and many other affections, therefore, it cannot be said that chronic arthritis depends upon low sugar tolerance, or that it is a disease of metabolism, since no evidence has been furnished to show a diminished ability to metabolize one or more of the foodstuffs. If infectious in origin one would expect such infection to be accompanied by toxic destruction of body protein, or by increase in basal metabolism, and this has not been shown; in other words, all the studies that have been developed to ascertain the cause of chronic arthritis (type three in Dr. Meyers classification), with joint deformity, contractures, etc., have utterly failed. I do not believe there is any way known to account for the development of this type of arthritis, and the symptoms continue despite anything we can do in the way of treatment. It must be understood that this statement does not apply to the other nine classifications stated by Dr. Meyers. All the latter can be accounted for on a fairly satisfactory basis and the patients may be treated with some measure of success. The fact remains, however, that a certain percentage of patients with any type of arthritis fail to get well.

I wish to emphasize a source of infection in arthritis not mentioned by the essayist which I believe is even more important than teeth, tonsils and prostate, viz., the colon. It is surprising now many arthritics, even after the removal of supposed foci of infection, do not improve until the intestinal tract has received requisite attention. I had the opportunity of studying cases of this kind over a period of ten years, the majority of the patients having infectious arthritis, and it was amazing how quickly these chronic cripples discarded crutches and canes after thorough elimination had been secured through the intestinal tract. As soon as the existing focus of infection in the intestine has

been removed—and this must always exist to some extent—there is marked improvement.

I now have under observation a patient for whom everything known was tried without the production of permanent benefit. She visited a celebrated clinic where her teeth and tonsils were removed; her nose and accessory sinuses were operated upon; the gall bladder, uterus, ovaries and fallopian tubes were extirpated, and every other organ of the body thoroughly investigated; she was given thyroid extract, vaccine, injections of milk, etc.; and still her symptoms persisted. About a week ago I began giving her pure salicylic acid in ten grain doses in milk of magnesia every two hours. After forty-eight hours she was able for the first time in many months to raise her arms over her head and partially extend her limbs. How long salicylic acid can be administered without causing gastric disturbance, I do not know; how soon her symptoms will reappear after the remedy is discontinued, I am unable to say; but the fact remains salicylic acid is the only drug that has had any effect. She has nothing more to be removed that might constitute a focus of infection; there is nothing left which might be a focus of infection except the colon; and if she has obtained temporary relief from the administration of salicylic acid some good has been accomplished. Possibly the milk of magnesia had something to do with her improvement through its laxative effect.

After all is said and done, after we have tried every remedy known, there will remain a certain number of cases of arthritis which cannot be accounted for on the basis of focal infection unless the colon is at fault, and treatment is unproductive of beneficial effects. About all we can do is to keep the gastro-intestinal tract well cleansed, give the patients plenty of water, and administer symptomatic remedies to keep them comfortable.

S. G. Dabney: I simply wish to relate a recent experience which I had with arthritis deformans confined to the fingers. Last July a lady in the early forties came to me with rather decided pain and considerable deformity in the joints of several fingers. She said her teeth had been examined by a roentgenologist with negative findings. She expected to leave for Michigan the following day.

I suggested to the patient that it might be well to examine her tonsils as they might be the source of infection. The tonsils were inspected, found diseased, and were removed the next day. She went to Michigan five days afterward. I happened to see this patient a short time ago because of some other ailment, and her fingers were apparently normal. She said "a few months after operation her fingers became all right."

Of course we are all aware that one case does not prove anything. I do not recall having seen another case where arthritis deformans was confined to the fingers. This lady was greatly benefited by tonsillectomy; she received no other treatment.

November 20th, 1922: This lady has lately had an unusually large boil in the inner portion of her nostril near the upper anterior edge; it contained quite a little sac of pus; and it seemed to me interesting that some days later the joints in her fingers became red and swollen again.

H. G. Hamer, of Indianapolis: I agree with what Dr. Baldauf has said about prostatic infection in relation to arthritis. However, the prostate is not the most common infective focus in the genito-urinary system, the seminal vesicles are oftener responsible for the production of chronic arthritis. The Fuller operation for drainage of the seminal vesicles was developed on that very theory, and if there is ever an excuse for performing that operation it is to remove this focus of infection in arthritis.

Guy P. Grigsby: While I was in the hospital for the Ruptured and Crippled, New York, an experiment was made in ten cases of arthritis deformans in elderly women by placing them on an exclusive diet of buttermilk. So long as they received nothing else they had no pain; but when a liberal diet was allowed discomfort returned. It would seem, therefore, that diet may have some influence in such cases.

Based upon my personal experience with arthritis, I am in accord with the theory advanced by Dr. Dowden, that the colon may be the focus of infection in many instances. I am reminded of one rather severe case of arthritis in which no benefit was noted from various methods of treatment, and after several months suffering the patient was given ten grains of calomel one night, and ten grains two nights later. Within five days he was able to walk and there has been no recurrence of symptoms.

My belief is that elimination through the intestinal tract will accomplish more good in infective arthritis than any other method of treatment. The salicylates are useful and may relieve symptoms, but thorough elimination probably does more good than anything else.

Gavin Fulton: While our knowledge concerning the existing relationship between focal infection and arthritis has increased considerably during the last few years, we are still in the dark about many phases of the subject. We know the patient has a chance for permanent recovery if the focus of infection can be discovered and removed; but unfortunately the infective foci cannot always be discovered.

The cause of arthritis deformans is not definitely known, nor does any method of treatment promise much to the patient. We may theorize at length about the cause, but this does not help the patient. In chronic cases I believe there is

some metabolic defect, and if any of these patients get well "God and not the doctor" is the chief factor.

I now have under observation several cases of arthritis deformans in elderly people. Temporary improvement occurs under treatment, but exacerbations recur from time to time. They are relieved, but not cured, by the administration of large doses of salicylates, the drug being discontinued just short of the production of tinnitus aurium. Salicylates can be given in that way over long periods of time. I have used salicylate of soda, and also salicylic acid, repeating the dose frequently for sixty hours, then after giving the patient a rest, I begin all over again. The salicylates administered in that way do not produce gastric disturbances. However, nothing that I have ever used has relieved the "chronicity of the situation."

W. E. Gardner: During a short service in the neurological department of Peter Bent Brigham Hospital this summer I had the opportunity of seeing several patients with chronic arthritis who had been carefully and repeatedly studied and all possible sources of infection investigated without success. The patients had suffered numerous recurrent attacks of arthritis. However, none of them exhibited the deformans type. I was a little surprised to hear a member of the staff say: "I do not believe we know very much about the cause of arthritis at the present time:" because I had heard so much about arthritis being due to focal infection, and that relief might be secured by removal of the focus (teeth, tonsils, etc.), that I had gained the impression that practically all the arthritides were due to focal infection.

This is somewhat in keeping with a part of the remarks made by Dr. Dowden, Dr. Moore and others as to the limited knowledge of the etiology of arthritis that we have at this time, especially the chronic recurrent types. There is no question, however, that many cases of the other types referred to by Dr. Meyers may be successfully treated along the lines he indicated in his excellent paper.

John E. Hays: In arthritis for which no other cause can be discovered, the theory advanced by Dr. Dowden is probably correct, i. e., that the colon is at fault. The fact is that in the majority of cases of arthritis I believe the intestinal tract is a most important factor. It has been my practice in these cases to regulate the diet and secure thorough elimination through the intestinal canal. In addition to that good results have been obtained by the administration of iodide of soda. This drug is administered in large doses well diluted. Where arthritis has its origin in focal infection in the gastro-intestinal tract, I believe better results can be secured from regulation of diet and the administration of iodide of soda than by any other plan of management.

J. R. Peabody: Every one engaged in nose and throat work is interested in the type of arthritis which is due to focal infection of the tonsils or accessory sinuses. Nothing has been said tonight about the sinuses as foci of infection, although patients are occasionally referred to us where sinus infection is suspected as being responsible for the production of arthritis. However, it has been my experience that the sinuses are less frequently the site of infective foci than the tonsils and teeth.

Hastings, of California, in a recent article gives the results of his experience, observation and study extending over a number of years in reference to disease of the tonsils and arthritis. He does not believe tonsillectomy is of any benefit in arthritis deformans. He reports one hundred and thirty cases of infective arthritis where the patients were traced and tabulates his results. About forty per cent were cured by tonsillectomy, forty per cent improved the remainder unimproved. In the discussion of Hastings' paper Davis, of Chicago, stated that he had examined the tonsils of many healthy children and adults and that about ninety per cent showed the presence of strepococci. He concludes that the tonsil is the normal habitat of the streptococcus, just as the intestine is for the colon bacillus, and the skin for the staphylococcus. It is impossible to state definitely whether the tonsils are the real foci of infection in many cases of arthritis. Hastings emphasizes the fact that the intestinal canal may be the source of infection in many instances, and in some of his cases there was no improvement after tonsillectomy until the intestinal tract has received attention, showing conclusively that the focus of infection was in the intestinal tract and not in the tonsil.

Positive cultures made from scrapings of the surface of the tonsil or even from the crypts is not conclusive evidence that the tonsil is responsible for existing arthritis. However, in all cases where the tonsils are diseased they should be removed; the patient suffers no inconvenience from their loss. If the question must be decided whether to remove the teeth or the tonsils, I would certainly perform tonsillectomy first.

Another question about which little has been said is the vaccine treatment of arthritis presumably due to focal infection in the tonsils. I understand one Louisville specialist makes vaccine from the tonsils in every case where he performs tonsillectomy for relief of arthritis and this vaccine is given the patient. So far as I am aware his results have not been published.

Sidney J. Meyers (closing): I wish to thank the gentlemen for the very liberal dis-

cussion of my paper which contained nothing new nor original.

One of the objects in presenting the paper was to insist upon internists making a correct diagnosis of the type of arthritis. It is our own fault that osteopaths and chiropractors are treating so many people with arthritis; we do not examine our patients with sufficient thoroughness to insure a correct diagnosis. In every case of arthritis painstaking physical examination, careful history taking, and roentgeno-graphic examination are necessary before making a definite diagnosis.

In regard to treatment: Arthritis can be treated intelligently only after a correct diagnosis of the type has been made. The mistake internists frequently make is in promising the patient too much, i. e., by stating that after the focus of infection has been discovered and removed patients will get well. We know that they do not always recover. There is less danger of permanent joint damage in infective arthritis than to the endocardium, and too much must not be promised the patient. In every case of arthritis where the tonsils show evidence of disease tonsillectomy is indicated; but the macroscopical appearance of the tonsils should not be the only guide. I also believe that in every case of endocarditis if the patient is in physical condition to undergo operation the tonsils should be removed. The tonsils harbor bacteria and patients with arthritis and endocarditis are less able to stand infection than healthy individuals.

In arthritis deformans the treatment is purely symptomatic. I am aware of nothing which will promise the patient permanent relief. Some time ago when foreign protein was advocated in the treatment of arthritis I administered to a patient 3 mm. of typhoid vaccine. This was followed by alarming symptoms and for a time it was thought the patient would succumb. The arthritis finally subsided but I am sure the foreign protein had nothing to do with recovery.

Ophthalmia Neonatorum.—This paper is based on a series of 233 cases of ophthalmia neonatorum. The gonococcus was found in 55 per cent of cases. Corneal involvement was present in twenty-nine cases. In twelve cases but one eye was affected, in seventeen cases both eyes were affected. Corneal damage was done in 12 per cent. There was no loss of vision on leaving the hospital in 201 cases out of 205 cases, or 98.04 per cent. In three cases, or 1.42 per cent, there was loss of vision in only one eye, and in one case, or 0.48 per cent, total blindness resulted. The only prophylactic means employed were care and cleanliness in handling and instilation of argyrol three or four times daily in the unaffected eye. Glass protection shields were not used.

VALUE OF THE CYSTOSCOPE IN DIAGNOSIS OF DISEASE IN UPPER URINARY TRACT.*

By Claude G. Hoffman, Louisville.

When we consider the present perfection of the methods of precision—physical, chemical, mechanical and microscopic,—for determining the presence or absence of disease or abnormality in the upper urinary tract, we are profoundly impressed with the remarkable diagnostic ability of older physicians and surgeons whose only guides were the clinical manifestations and the bladder urine. In justice to these older observers it may be said that their clinical diagnoses were usually correct as demonstrated by subsequent events. The wonder to us now is, not that they sometimes failed, but that they were ever right in their deductions based upon the meager information which they possessed.

Although the cystoscope was not actually devised or invented until 1877, by Nitze, it may be interesting to mention the fact that the first suggestion of instrumental aid in the diagnosis of disease involving the upper urinary tract must be credited to Bruck, who, in 1867, described a method of examining body cavities by the assistance of a "glow-wire" or platinum loop. Since the days of Bruck and Nitze many important modifications and improvements have been made in the construction of cystoscopes, and we now have several types which are mechanically perfect. The electric light was first applied to the cystoscope by Newman in 1883. There are many instruments on the market, differing somewhat in character, but as all are based upon the original ideas of Nitze and Boisseau, detailed description is unnecessary.

So far as can be ascertained, ureteral catheterization was first successfully accomplished with the so-called Boisseau instrument by Poirier, who remarked at the time that the difficulties encountered in use of the cystoscope in vesical tumors did not appear in catheterization of the ureters which he had found was very easy; that after only a limited experience he easily located the ureteral orifices which the small catheter readily penetrated. He was thus able to secure for examination, for the first time, separate urine from each kidney without the possibility of contamination.

Cystoscopy and ureteral catheterization have now become routine diagnostic procedures, and may even be successfully accomplished in young subjects, which not many years ago was thought to be impossible. "It is a simple procedure to cystoscope the blad-

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der and catheterize the ureters of girls of any age, and of boys over four or five years old. In twenty-six children in whose cases cystoscopic examination was made, the youngest boy was three years old, and the youngest girl eleven months old." (Hinman). The type of cystoscope employed is of little importance, so long as the operator is sufficiently experienced in its uses and exercises the requisite care and gentleness in his manipulations.

The technique of cystoscopy for the diagnosis of lesions involving the interior of the urinary bladder has long since been practically standardized and need not be described. In lesser degree this is also true of the upper urinary tract, ureteral catheterization not being a difficult procedure in the hands of expert urologists. The cystoscope having been introduced, the experienced operator seldom encounters difficulty in locating the interureteric fold provided the vesical mucosa be not extensively ulcerated or trabeculated; the ureteral orifices are readily brought into view and insertion of the catheter is then easily accomplished. The procedure may be satisfactorily executed with the patient either prone or in the so-called lithotomy position, according to the preference of the operator. In the adult, anesthesia is unnecessary unless the patient is exceedingly nervous with urethra and bladder intolerant to instrumentation; under the latter circumstances either local or general anesthesia may be used. In young children the operation should always be performed under general anesthesia.

Obviously successful cystoscopy and ureteral catheterization must imply:

(1) Complete familiarity with the mechanism of the cystoscope and other appliances used:

(2) Sufficient operative dexterity to insure accuracy in the necessary manipulations:

(3) Adequate knowledge and appreciation of anatomic landmarks peculiar to the structures being invaded:

(4) A urethra of sufficient caliber to permit introduction of the instrument without causing injury or hemorrhage:

(5) The vesicle cavity must be distended with either fluid or air to afford a clear view.

In the diagnosis of disease or abnormality involving the upper urinary tract, the cystoscope and ureteral catheter are vitally important agencies; but the findings thus obtained should in many instances be supplemented and confirmed by roentgen-ray examination with the catheter in situ. The so-called shadowgraph catheter is of great value in connection with x-ray investigation By the use of this combination of methods nearly every type of ureteral and renal pathology may be positively demonstrated and accurately diagnosed.

THE URETERS

Pain and other urinary symptoms suggesting ureteral obstruction are among the most frequent manifestations requiring introduction of the ureteral catheter for diagnostic purposes. Ureteral obstruction may be produced by quite a variety of agencies, both intrinsic and extrinsic—some being common, others rare, or at least seldom encountered. The following list is by no means complete, but will serve to illustrate some of the types.

(1) From calculi which may have either occluded the reno-ureteral opening or passed into the ureteral lumen:

(2) From kinking of an elongated but otherwise normal ureter, anomalous confirmation of the ureter with obliteration of its lumen, or angulation and displacement by pressure of neoplasms, the gravid uterus, visceroptosis, etc.:

(3) From extension of inflammatory exudate and adhesions post-operative or otherwise due to appendicitis, particularly the chronic post-cecal type; also from infection of the uterus and its appendages:

(4) From so-called "pus-obstruction" in pyelitis of tuberculous or other infective origin; and ascending infection (cystitis) the result of Neisserian or other pyogenic organisms:

(5) From ureteral intussusception (rare) where previous obstruction has caused dilation of the proximal segment:

(6) From stricture due to inflammatory thickening of the ureteral walls of known or unknown origin.

Whatever may be the agency to which ureteral obstruction owes its origin, proximal sacculation (hydro-ureter) is the logical result. By careful application of the methods of investigation which have been mentioned, the causative factor can usually be determined.

It is sometimes of distinct advantage, especially when sufficient distortion of the ureter exists to render introduction of the catheter difficult, to first inject an opaque substance and then make an x-ray examination which will reveal the degree of sacculation proximal to the constriction. This method is also useful in demonstrating ureteral kinks and tortuosities and in the diagnosis of calculi which, because of their chemical composition, are invisible to the roentgen-ray until coated with opaque solution. It must not be

forgotten that the diagnosis of ureteral calculi cannot always be positively made by means of the wax-tip catheter.

It has been repeatedly shown that ureteral calculi are difficult of differentiation from other concretions which may be present in the pelvic cavity by use of the roentgen-ray alone. Moreover, as already stated, calculi may exist within the ureteral lumen and not be visable to the x-ray. Before accepting a pelvic shadow as indicating a calculus in the lower ureteral segment, the following conditions should be fulfilled: (a) the shadow should be in the line of the ureter, (b) it should be oval or somewhat elongated in outline, (c) its long axis should be directed downward toward the bladder. It is important to remember that pelvic shadows may be produced by phleboliths, calcified lymph glands, patches of atheroma in vessels, appendiceal and intestinal concretions, etc., and these must be excluded.

To avoid diagnostic error, a method of double x-ray exposure on a single film has been advocated by Kretschmer and others as a means of determining whether shadows seen in the ureteral region, and of the approximate density of urinary calculi, are indeed calculi or other foreign bodies, such as phleboliths, calcified glands, or enteroliths, which may occur in about the same locality. This method purports simply to show whether the shadow is—or is not—in the plane of the ureter. In practicing it, an opaque catheter is first introduced into the ureter; an ordinary exposure is then made in the region of the abnormal shadow; the x-ray tube is then shifted laterally two or three inches, without moving either the patient or the film, and another exposure made on the same film. In other words, both exposures of a stereoscopic pair are made on the one film.

The completed picture then shows the shadow of each the catheter and the foreign body twice. As the source of the x-ray is the only thing that has moved, if the two objects (i. e., the catheter and the dense body causing the shadow) are in the same plane, they will be shown in exactly the same relationship to each other in both pictures made by the two exposures. If, however, the catheter lie in front or behind the object, the shifting of the x-ray tube will have thrown them into varying relationship with the source of the x-ray, so they will be seen in a decidedly different relationship to each other in the two exposures. Furthermore, the difference in the plane of the catheter and the object, if there be any, will determine the difference in the two pictures, so that the farther the object is from the ureter the more difference will there be in the two pictures. Of course, this technique need be resorted to only in cases where the first picture taken shows an object apparently overlying the ureter.

If subsequently either of the two pictures taken with the catheter in situ shows the object and the catheter not in close relationship to each other, this will be sufficient proof that the object is not a ureteral calculus.

Since other foreign bodies in the pelvic cavity, and outside of the ureteral lumen, may cause considerable diagnostic confusion, precautions should be observed to insure accurate differentiation. By employing the method suggested in the foregoing, diagnostic errors can be avoided in the majority of instances.

THE KIDNEYS

The value of the cystoscope, ureteral catheter and the roentgen-ray in the diagnosis of renal lesions, cannot be too strongly emphasized. By this combination of mechanical appliances it is possible to determine with absolute certainty:

(1) Whether both kidneys are present, and if there be only one, which is absent:

(2) Whether the kidneys are normal or abnormal in size and conformation:

(3) Whether each kidney is in its normal situation, or displaced, moveable, or floating:

(4) Whether hemorrhage not originating in the urethra or urinary bladder comes from one kidney or both; in similar manner the origin of pus and the causative bacteria may also be ascertained:

(5) Whether each kidney pelvis is normal in capacity, and whether there is present pyelitis, pyonephrosis, hydronephrosis, or a large abscess cavity:

(6) When disease (nephritis, tuberculosis, etc.,) exists, ureteral catheterization will demonstrate whether one or both kidneys are involved, and if both, which is the worst:

(7) The functionating ability of the kidney, separately and relatively, may be determined by the elimination of dye substances. It is important, however, that several tests be made to insure accuracy in functional estimation; the fallacy of a single test has been emphasized by several observers.

"Without cystoscopy, urologic diagnosis is frequently faulty and often impossible; certain operative procedures can be performed through the cystoscope which otherwise would require a cutting operation." (Begg).

Tumor and certain abnormalities of the kidney, its pelvis, or the calyces, may be demonstrated by pyelography; that is, by first injecting an opaque substance or air into the renal pelvis through the ureteral catheter, and then making a roentgen-ray examination.

This method will also show the position of the kidney with the size and contour of its pelvis. Pyelography, however, is not a simple procedure and must be practiced with caution. "There are elements of danger in injecting the renal pelvis with solutions, in that it has been shown that even under very moderate pressure the solution passes up the urinary tubules and permeates the kidney tissue to make infarcts and infiltrations that have proved highly injurious or even fatal." (Cabot). The solution should always be injected slowly by gravity to avoid over-distention of the renal pelvis.

In closing I wish to state that in every instance in which a specimen of urine withdrawn from the bladder by catheter shows the presence of pus, blood, or both, cystoscopy is demanded for the purpose of diagnosis.

BLASTOMYCOSIS IN KENTUCKY*

By Stuart Graves, Louisville

(From the Pathology Laboratory of the Medical Department of the University of Louisville and of the Louisville City Hospital.)

The object of bringing this subject before the Kentucky State Medical Society is threefold. First, we want to call the attention of the profession to this interesting disease because we believe it is more prevalent than is commonly supposed, because it is fairly easily and positively diagnosed and is reasonably amenable to treatment if not too far advanced and because it may prove fatal if not checked. Secondly, we want to take this opportunity of recording briefly four cases which have come into touch with our department in the last six years. Thirdly, we want to invite any member of the profession who thinks he may have a case to allow us to cooperate with him in making a positive diagnosis to the end that the disease may be more accurately studied in this section of the country, for the benefit of the public and of the profession.

Blastomycosis is an infectious disease. It is caused by the entrance and multiplication of pathogenic yeast cells, to which the inflammatory reaction is essentially chronic, resulting in granulomatous formation which is most frequently mistaken for syphilis or tuberculosis. As a rule the infection is confined to the skin, runs a course of months or years and may cause more or less disturbance of the general health, including anemia. Instances of acute attacks with fever have been reported. Rarely the organisms enter the blood stream and cause a generalized dissemination. Infection of the lungs is generally mistaken for chronic pulmonary tuberculosis. In our one generalized case, in which the distribution shown at autopsy was more extensive than in almost any other case we have found reported, it seems very probable that the organisms were inhaled from the cutaneous lesions about the nares and passed into the blood stream from the lungs as tubercle bacilli do. In this case practically every tissue in the body was invaded.

My interest in the disease was first aroused in 1916 when the late Dr. I. N. Bloom, Professor of Dermatology in the University of Louisville, sent a white man, 21 years old, to the laboratory of the Louisville City Hospital from the Out-patient Department skin clinic. Dr. Bloom had made a clinical diagnosis of blastomycosis and asked me to confirm it in the laboratory. A smear was made of pus from beneath the margin of one of the cutaneous ulcers, mixed with a drop of 10 per cent solution of hydroxide and examined microscopically unstained under a cover slip. After some little search, a typical budding yeast cell was found. This patient was demonstrated at clinics several times. With Dr. Bloom's permission, I removed a piece of tissue from one of the lesions on his buttock and made microscopic sections. The budding yeast cell and the surrounding cellular reaction will be shown clearly in lantern slide No. 1 (OS. 16-16) .1. The person who promised to get a photograph of this patient did not and so I cannot show you a picture of him, but the lesions were typical. The largest on his face might very well have served for the illustration in the ninth edition of McFarland's "Pathogenic Bacteria." p. 794. The granuloma on his cheek involved the lower lid of one eye badly and the lesions were more or less symmetrically distributed over his body. The patient was discharged after several weeks, much improved and went to his home somewhere in Eastern Kentucky. I am going to

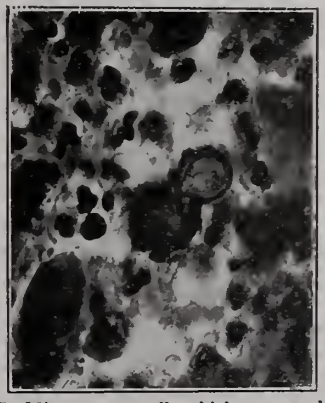


Fig. 1. Budding yeast cell which causes blastomycosis. (Magnified 1500 times). Patient +1.

*Read before the Kentucky State Medical Association, Paducah, October 16, 17, 18, 19, 1923.

give you his name because, if he is known to any of you I should like to communicate with him. Cultures from this case were sent to Professor D. J. Davis of the University of Illinois who pronounced them pure blastomyces. This culture, known as the "Kentucky Culture," is still in stock and shows a typical growth of one month on a meat infusion agar slant which is here for examination.

The careful teaching in the first case led a medical student to suspect the second in the Outpatient Department clinic. The student brought the patient, a negro 53 years old, to the laboratory and the diagnosis was confirmed with a fresh smear. I made sure of a photograph this time by taking it myself and the typical lesions on the arm are shown in slide No. 2. (2) This patient was in Louisville City Hospital from March 14th, 1916, until September 7th, and was discharged much improved. He came from Trenton, Ky., and went to Clarksville, Tenn. We should be glad to get information about him. According to the recorded history the disease had started as a "boil" about three years before admission and had gradually spread over his forearm. He attributed it to handling Paris green in fighting tobacco worms. A similar condition had developed over the occipital protuberance by the time he was admitted, but no others were noted elsewhere. His Wassermann was negative. Treatment consisted chiefly of regular dressings. SSKI in doses of 15-30 minims q. 4 h., magnesium sulphate compresses, formin in 5 gr. doses q. 4 h. and skin grafting in April. His T. P. R. curves were practically normal and he had no evidence of internal pathology.



Fig. 2. Blastomycotic dermatitis of arm. Patient +2.

The third patient was brought by the late Dr. Bloom from his private practice to the Louisville City Hospital for demonstration to the medical students. He was a teacher, white, 54 years old, from Pound, Va., He was admitted on October 21, 1921, for observation and treatment and was discharged unimproved November 4, 1922. About seven months prior to admission the patient had noticed a "growth" under one arm which itched and finally became ulcerated. Others appeared on his face, arms, chest and legs. Some one had given him a "cancer cure" which he thought contained arsenic and iodide. This had been applied locally to one of the largest ulcers and removed it in about two weeks. At this site he had a large, pale, smooth, drawn, shiny scar. The appearance of the granulomata of the face is shown in slides Nos. 3 and 4. (4) They meet the typical description in standard text books on dermatology. The chart in this case reveals nothing else of interest relevant to blastomycosis. Cultures from the ulcers gave staphylococcus aureus and streptococcus hemolyticus. Wassermann negative. T. P. R. about normal. Blood count and urinalysis negative. Repeated attempts to demonstrate blastomyces in fresh smears were unsuccessful. Finally, in a section of tissue from the edge of one of the ulcers. I found unmistakable budding blastomyces after a search of two hours. Treatment consisted of SSKI up to 60 minims t.i.d and a local application of tincture of iodine b.i.d.



Fig. 3. Blastomycotic dermatitis, showing more or less symmetrical distribution about face. Patient +3.

The fourth case is the most remarkable of all. The patient was a negro 57 years old who had lived all his life in Louisville, and worked in a tobacco factory. He was admitted on November 22, 1921, for myocarditis and inguinal adentitis. Even at this time he must have been riddled with the disease. His temperature on admission is recorded as 96.4, his pulse as 84 and his respiration as 20. Strychnine and aspirin were administered and he was kept quiet. By the fifth day his pulse had gradually risen to 112, although his temperature remained about normal and his respiration varied from 22 to 32. On the ninth

day his temperature touched 100, when his pulse was 110 and his respiration 26. Within forty-eight hours his pulse, temperature and respiration were about normal again. Three days before death his pulse went to 120 and

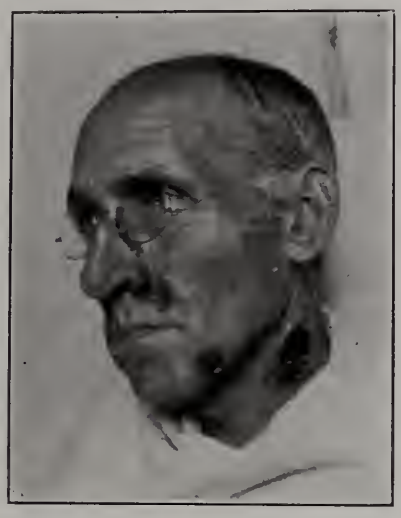


Fig. 4. Blastomycotic dermatitis, showing typical ovoidal lesion on neck. Patient +3.

continued from 120 to 138, his temperature remaining normal and his respiration varying from 26 to 40. In this it is seen that his pulse was much more abnormal than his temperature or respiration, which is decidedly interesting in view of the postmortem findings.

The chief complaints on admission were pain in the left chest, first noticed six months before, and pain in the right hip. I might digress for a moment to emphasize the teaching of my professor of medicine, the late Dr. Henry L. Elsner, who used to say over and over, "If you have a definite sign of pain, cling to



Fig. 5. Blastomycotic dermatitis, showing left side of face of man who died with extensive generalized blastomycosis. Patient +4.

it. It always means something." It did in this case. At that time his right hip bone was riddled with blastomyces and both lungs contained myriads of the fungi. The chart (MMC 40, 172) states that he had had measles, whooping cough, diphtheria and gonorrhea, but had no history of syphilis. His Wassermann was negative.

During the previous six months he had lost forty pounds. He did not cough much, but did expectorate a frothy fluid, at times stained with blood. No tubercle bacilli were found and, unfortunately, no search was made for yeast fungi. At times in such cases they may be demonstrated in sputum. There was pain in the chest, shortness of breath and palpitation, especially after even slight exertion. Oedema and night sweats were absent. Shortly before admission he had been rapidly growing weaker. Essential points in the recorded physical examinations by the interne, Dr. Burian, are as follows:

Development good. Nutrition poor, slight amount of dyspnea and cyanosis. Has some skin disease, marked over face. Lesions is elevated, rough and has few pustules over surface. Over entire nose, but especially on



Fig. 6. Right side of face of same patient. Note extension of deep dermatitis into nares in these two illustrations. Patient +4.

left side, lesion is very pronounced. Breath foul. Teeth poor. Tongue coated. Neck pulsations present. Intercostal spaces sunken. Respirations regular, costal and abdominal in type. Tactile fremitus increased over middle right lobe and to lesser degree over upper right lobe and over left lung. Percussion note impaired all over both lungs, anteriorly and posteriorly. Bronchial breathings and rales heard over both lungs; also pleuritic rub. Heart apex in fifth space. Sounds distinct. Some rigidity of rectal muscles, but no abdominal pain or tenderness. Right inguinal lymph nodes enlarged and tender. Light reaction of pupils and knee jerks absent. Blood pressure 110-80. Urine dark amber, cloudy, acid, 1,020, traces of albumen, no sugar, numerous pus cells. Red blood cells 5,100,000. Leucocytes 12,050; polymorphonu-clear leu-

cocytes, 85 per cent; lymphocytes, 13 per cent; transitionals, 2 per cent.

The day after admission a stereoscopic radiograph of the lungs brought the following report: "Roentgenogram of chest shows clouding of both apices, increased fusing of hilus shadows and more or less fine lace-like mottling scattered throughout both lungs. Heart shadows apparently normal. Impression: pulmonary tuberculosis, fairly advanced."

On December 3rd, four days before death, the radiographer, Dr. Turned, made the following report:

"Roentgenogram of both hands, including wrist and lower end of forearm, shows area of rarefaction in medical side of fifth metatarsal near its distal end which has a very thin shell marking its outline. There is marked swelling of soft parts in this immediate vicinity.



Fig. 7. Small dry lesions of foot and lower leg of same patient. Bit of skin from similar lesion of arm was used for making diagnosis in this case.

There is also a small localized area of rarefaction in left radium near its distal end which is immediately under skin lesion. This does not resemble tuberculosis. It somewhat resembles a bone lesion produced by actinomycosis. Would suggest excision of small piece of tissue for pathological examination."

A bit of tissue from the non-ulcerated lesions of the forearm was excised and sent to the pathology laboratory. It was not difficult to demonstrate blastomyces in this section and the diagnosis was definitely established (S. 21-332).

Four days later the patient died early in the morning and I spent all that day in making a thorough post mortem examination. The details of this examination are being reserved for subsequent publication. The lantern slides will show you how much the body was involved. There are few cases on record showing such extensive dissemination.

The late Dr. Bloom and his assistant in the University Clinic, Dr. W. J. Young, have told me that they have seen several cases of blastomycotic dermatitis and that the patients come mostly from the Eastern Kentucky Mountains. Most cases have heretofore been reported from Chicago and California, but at the meeting of the American Association of Pathologists in Washington last spring, where

I showed these lantern slides, Dr. Mark Marshall told me of a case he was studying in the University of Virginia and I also learned of another case in Cook County Hospital in Chicago. The Chicago studies have been gathered by Stober and published with many illustrations in the Archives of Internal Medicine, 1913, Vol, X111, p 509, 623. This and the articles by Ricketts (Journal Medical Research, 1901, Vol. X1, box 3.) are perhaps the most worth while for you to study.

The disease is most prevalent among people of low resistance and of negligent hygiene who live in sordid conditions. It is undoubtedly more prevalent than generally supposed. As stated in the begnning, itis easily diagdeserving of more attention from the medical profession than it has received.

DISCUSSION

Woolfolk Barrow, Lexington: I have seen three cases of blastomycosis. All of the cases were treated alike, namely, a thorough curettement with sharp curette, followed by x-ray exposure. All of the cases have turned out satisfactorily. I might say that I treated one patient thinking that I had a blastomycosis, and the condition turned out to be tuberculosis. This case was greatly benefited by this treatment. However, the disease returned.

Oscar O. Miller, Louisville: We are indebted to Dr. Graves for this excellent presentation and for the extreme amount of work he has done to bring this complete report before us. We have no conception of the large amount of laboratory work done in this particular case.

In regard to the differential diagnosis between blastomycosis and tuberculosis, we must remember that in the diagnosis of these conditions we are

dealing with certain areas of density or decreased density and of certain phenomena which we must interpret in the light of clinical symptoms and clinical history. In other words, the physical signs in this case as elicited by examination of this man was in no way different as regards the findings in a case of pulmonary tuberculosis. It was not the classical picture however of tuberculosis. This man when I saw him had had a subnormal temperature for some time; but even cases of pulmonary tuberculosis in the terminal stages develop a subnormal temperature. The patient had been running a high fever, but the temperature suddenly became subnormal. He was in extremis when I saw him, and died a few hours after examination. He had a distinct impairment of both lobes with feeble breath sounds; there was no characteristic rales, such as you would expect to find in tuberculosis. I made a provisional diagnosis of tuberculosis. The skin lesions should have put me on my guard in this case.

In miliary tuberculosis the physical signs are meager. Examination may be negative. You may get a hyperresonant note instead of impairment, and rales are usually absent. There is a history of pyrexia with marked toxic signs. I saw the autopsy and it is impossible to conceive from the report the extensive pathology found in this case. As Dr. Graves pointed out, the ilium and femur were one necrotic mass.

Guy Aud, Louisville: This case is of interest to the surgeon as well as to the internist. This is one of the most complete demonstrations I have ever seen because of the fact that it has been worked up so thoroughly. Blastomycosis is a condition that all surgeons should bear in mind because of the fact that sometimes the surgeon gets hold of discharging sinuses that persist in spite of all treatment, and occasionally the surgeon is chagrined to find that the cause is a blastomycosis. If we get these cases early enough, before they have spread to a marked degree, complete excision will cure them. It is surprising how early and how frequent they extend into the lungs, as pointed out by Dr. Graves.

The medical treatment has not been particularly brilliant. In some cases the results have been good from treatment by potassium iodid. One should give the treatment with potassium iodid to the point of tolerance. I believe that has become the accepted medicinal treatment, but the results are very disappointing.

As to the local treatment of these cases with medicinal agents, probably if you give them some sort of agent sufficiently penetrating to reach the fungus and destroy it, you may produce a evil, but there is no treatment which will do this. It seems to me, after all, the best treatment is complete excision, when possible.

W. J. Young, Louisville: I am very glad Dr. Graves has called the attention of the medical profession to the frequency of blastomycosis. It is a disease, which, when recognized at its onset can be easily eradicated; whereas, after inroads over a number of years, it is often intractable. Blastomycosis starts as a papule or a papule-pustule, over which a crust forms.The lesion extends peripherially and soon forms an elevated verrucous patch of spongy consistency exuding pus upon pressure. The disease is most apt to be taken for tuberculosis orverrucosa cutis and it is practically impossible to differenciate between the two without microscopic examination. The next disease most apt to be confused is lupus vulgaris. Mycosis fungoidis is also to be considered.

The treatment is internal and external. S. S. K. I. is given in increasing doses and the modern external application consists for the most part of x-ray and radium therapy. Just how important a part S. S. K. I. plays in the treatment I am unable to say. I have seen favorable results obtained upon blastomycosis by x-ray and radium application, both with and without S. S. K. I. being used as an adjunct.

The amount of x-ray or radium radiation is an erythema dose, to be repeated in seven weeks if necessary. These lesions clear up and leave a thin parchment like scar. The important point in the treatment being to expose at least a quarter of an inch of normal skin beyond the process.

I have just recently obtained a clinical cure on a case in which a lesion the size of a dollar was easily removed in one treatment of x-ray, whereas one involving the entire back of the hand and wrist required one dose of x-ray and three doses of radium. The point being it is easy to check a recent lesion. After hearing Dr. Graves' report of the extensive involvment of his fourth case I am surprised to see to what extent the involvment may reach. For the most part we dermatologists see the cases of blastomycosis after the disease has progressed for a number of years. I believe this is because the disease is found more often among the poorer classes and it is difficult to get them to come to town and go through the examinations to confirm suspicions.

I agree with Dr. Graves it would be a decided advantage if the medical profession bear in mind this disease and take means of diagnosing or excluding it in suspicious lesions.

Stuart Graves, Louisville (closing): I should like to emphasize one point. There is no reason for mistaking tuberculosis or syphilis in these cases. Most of the blastomycotic cases confined to the skin are mistaken for these two things. Sometimes the dermatologist will ven-

ture a diagnosis of a rarer condition. A man with active second syphilitic lesions of the skin will practically always give a positive Wassermann. In tuberculosis of the skin, careful search will demonstrate tubercle bacilli. In blastomycosis a primary smear of the fresh material, diluted with 10 per cent sodium hydroxid and examined with the ordinary one-sixth dry objective will reveal the organism usually. A section taken from the edge of the skin at right angles to the edge of the ulcer and examined by a competent pathologist will usually reveal the diagnosis. With care, there is no reason for making a mistake in the diagnosis.

LOCAL ANESTHETIC IN HERNIOTOMY*

By Oscar Bloch, Louisville

He is a dangerous surgeon, who uses one method for all patients, be it anaesthetic, pre-operative preparation, operative technique or post-operative treatment. By this introductory statement, I want to emphasize the fact that each patient is an individual case, requiring individual and particular attention and that no general rule can be made to apply to every surgical patient. Especially should this idea be carried in mind by the surgeon who does hernia operations.

Many elements enter into the consideration of the best thing to be done for the patient with a hernia. The most important question is whether the hernia is operable or not. Of course, strangulated hernias are always operable and are not to be considered otherwise, under any circumstances.

There are two forms of hernia in which I consider operative measures of doubtful benefit. First, the large, scrotal hernia, irreducible, in spite of a large open ring, on account of the intimate adhesions between the contents and the sac, due to the long duration of the hernia, truss pressure, or to previous inflammation. These hernias are most often found in middle aged, fat men, with soft flabby flesh and practically no muscular strength. These patients do not do well after operation, for they easily develop pneumonia, and, should they get over the immediate operative effects, the hernia is very apt to return, larger than before operation. The second type of hernia requiring grave consideration as to operative benefits is the large, direct hernia, occuring in a person with a chronic bronchitis, or in a laborer whose work requires more or less constant strain of the abdominal muscles, such as a railroad section hand, a plumber's trench digger, or a foundry man.

All of these cases could be prevented by the uniform advice by medical men to their patients that all hernias be repaired while they are recent. I believe advice to wear a truss is almost the worst ever given to a patient, as, in practically all cases, the hernia gets larger, the tissues become lax, the muscles lose tone, and when the hernia comes to the surgeon for operation, conditions are such as to make the result a doubtful one. The most careful and specific advice is soon forgotten and the patient will get up, mornings and forget to apply the truss, or some emergency, such as a fire in the vicinity, a sick child, or an unusual street noise may provoke the patient to rush about his home or upon the street, without thought of his truss, or time to put it on; and strangulation, or at least damage, may occur.

Naturally, pre-operative examination and treatment are very important. Examination consists of a careful going over of the patient's lungs, heart, eyes, reflexes, and muscles; a conscientious laboratory report of urinalysis, hemaglobin and hemapexis. The pre-operative treatment depends entirely upon the conditions found by the examination, and upon the method of anaesthesia to be used. Generally speaking, patients should not be starved, nor should active purgation be used immediately before operation.

There are many reasons for the use of a local anaesthetic in hernia operations, and my satisfaction with this procedure is so great that the patient must present indications against its use before I will consider a general anaesthetic. This is precisely opposite to the view held by me two years ago. Then, a patient coming to me for a hernia operation would have been subjected to a general anesthetic as a routine measure, unless there were forbidding conditions.

Two good reasons for the use of the local anaesthetic are these: the absence of post-operative vomiting, and the freedom from pulmonary complications. These two reasons to my mind would be sufficient, but when to them may be added the perfect comfort of the conscious patient, who can assist the operator in various ways, the voluntary quiet after the operation, as contrasted with the excitement and movement of the patient reacting from a general anesthetic, the arguments in favor of the local anesthesia are conclusive.

Here I wish to state that the anesthetist does not lose his job, for I find that a diverting conversation carried on by some one at the patient's head is a most useful adjuvant to the successful result of the local anaes-

*Read before the Louisville Society of Medicine, December, 1922.

thesia. Who can do this job better than the man who has been administering general anaesthetics for years?

I would not use a local anesthetic for a child, or for a very nervous patient, especially one who is unwilling to be conscious when operated upon.

As to the method of using the local anaesthetic, unless there is some forbidding condition, such as opium idiosyncrasy, or a nephritis, I give hypodermically a dose of morphine and scopolamine two hours, and another one, one hour before operation.

For operating, I use ½ of 1% procain, or novocain, with adrenalin, introducing a very fine needle just beneath the epidermis and forming a wheal with the injected solution. I make a point of showing the hypodermic needle to the patient and telling him that this single prick constitutes his entire pain. I find that this is very satisfying to him and he makes no complaint. Subcuticular infiltration follows, the needle remaining in its original point of entry. Regional anaesthesia is obtained by putting a long needle deep into the tissue, and injecting around the ilio inguinal and ilio-hypogastric nerves. The deep tissues are infiltrated, at least an inch on either side of the incision.

Operation may now be carried out without pain until the spermatic cord is reached, then a few drops of novocain solution are injected into the cord just below its exit from the internal ring, and often a drop or two must be placed about the vas. Should the contents of the sac be adherent and manipulation becomes necessary, a small amount of urea-quinine injected into the omentum, or into the mesentery supplying any intestine present, will absolutely prevent any discomfort, and the operation can be carried out the same as if the patient were unconscious.

I have been operating upon hernias along these lines for some time, and have quite a list of satisfactory operations which I could detail to you. The post-operative condition of these patients is good, their only complaint is of slight burning in the wound, such as we have with the patient after a general anaesthetic.

There is no differences in the healing of the wound, for the same aseptic care is taken as in operations under a general anaesthetic.

I have used, lately, with satisfaction, the H. M. C. tablets, put out by Abbot, for the preliminary injections. I wish to add a word of caution as to the amount of adrenalin used in the anaesthetic solution. My experience has taught me that sloughing of the infiltrated area may result from having an increased amount of adrenalin.

PRACTICAL HINTS ON TYPHOID FEVER.*

By W. E. Reynolds, Hopkinsville.

The visual aspect and appearance of disis, and the study of clinical symptomatology has failed to receive the attention it deserves. Instrumental and theoretical methods are not intended to entirely supplant the educated finger, the observant eye, and the discriminating ear in the recognition of many problematic diseases. This does not mean to entirely disregard scientific technical means of diagnosis, but to be more observant of a clinical bedside examination.

There has been many pages written on typhoid fever, but as regards treatment we arae yet stumbling along over the same rugged pathway blazed out by the first discoverers of the disease, about one hundred years ago, with the same acknowledgement of a self limited disease.

No one has ventured to suggest a specific cure.

And the object of this paper will be to assist in making an early diagnosis before some one of the family names the disease, and also to suggest a successful or an abortive treatment.

It was not until 1829, that Dr. Lewis, differentiated between typhus fever and gave the name typhoid fever. Up to this date many observers had noted clinical differences in the continued fevers, and the difference in typhus and typhoid fever was not unanimously settled in England, until after Jenners observations in 1851. And at this enlightened day, very frequentlyy typhoid fever has developed many very serious symptoms before the attending physician has made out a positive diagnosis.

While I think the etiology of typhoid fever is incomplete, that is as regards to phyical laws in general, yet there have been some very interesting findings along the line of diagnosis and prophylatic treatment. But so far as general treatment there has been but little, if any advancement since the first discovery, before the assistance of the fever thermometer or laboratory findings, when the educated finger, eye, and ear was the only safe guide-post to a successful diagnosis.

It is unnecessary for me to take up your valuable time in going over the many symptoms laid down in text books that you may them you will find. And in this paper my endeavor will be to give you my practical experience and avoid as much as possible quotations from text-books. But suffice to say, typhoid fever is an infection of the lymph follicles, situated in the mucous membrane of the lower part of the small intes-

*Read before the Christian County Medical Society.

tines, opposite the mesenteric attachment, known as Peyers patches or glands. And as the disease is allowed to progress or bacilli-multiply, it is claimed to attack other organs, the spleen,liver and mesenteric glands, developing symptoms in proportion to the progress of the inflammation.

We wish to make the assertion, there are four constituents or elements necessary for the development of the organism of typhoid fever, bodily temperature, both vegetable and animal matter in a state of decomposition, and in an acid media. We can in no wise have typhoid fever without these four essentials. And the severity of the disease is in proportion to the decomposed material that has escaped digestion. Unless possibly the patient has been neglected or gone through an unnecessary course of medicine. For instance, a patient may have so perfect digestion as to have the disease so light as to hardly complain or escape it entirely, while others of the family subjected to the same infection may die. In milk the bacilli are said to thrive and multiply rapidly, and it is one source of propagation of the disease. If this be true, the milk would have to be in a state of fermentation or we could have no acid media, besides we would have to have proper temperature. While milk could acquire all the elements requisite for the organism of typhoid bacilli to grow, each vessel of the milk would have to be inoculated with the bacilli. So I am not so much taken to the theory of milk spreading the disease. If this was true, then we should have children and babies in the majority with typhoid fever, (as they frequently live alone on milk) which is not the case. In my boyhood days I often heard it said, a baby never had typhoid fever. I can only call to memory but one case coming under my care, under one year of age, that had typhoid fever and this was easily accounted for as it had mixed with its milk one half infected water. Admitting milk to be one way of infection, the fly might have two or three bugs in the hollow of his foot and lose one or two on your bread. Yet let it be what it may that transmit the germ, we will all agree that water is the fountain of production and propagation. Although it is a proven fact that the bacilli can only live a short while in water. This is proof of the fact, and I wish to impress upon your minds, without the necessary elements for the bacilli of typhoid, we can have no organism. Then to account for the contamation or infection of water, we will have to look to drainage from privies, cess pools and decomposed vegetables and animal matter. This may come quite a distance or sink to a considerable depth. Freezing has no effect further than to preserve the bacilli. But the hot sunshine by deprivoing the bacilli of moisture would so change the elements as to kill the germ.

Having mentioned the elements necessary for the development of the organism in this disease and the locality, we now desire to follow the food through some of the changes in digestion, which embraces all the etiology and pathology of this disease and arms us with success in our therapeutic endeavor. And as I promised in the outset to avoid as much as possible quotations, I will only mention a few changes along the alimentary canal.

So soon as food enters the mouth, digestion commences with an alkaline reaction from the saliva, converting all starchy matter into sugar. In the stomach we have an acid reaction and would be a favorable field of contact for the bacilli if other elements were present that are necessary, decomposition and putrefaction, but the mass enters the duedenum coming in contact with the bile and pancreatic juices, becoming slightly alkaline or neutral. Continuing through the jejunum, again becoming acid in the ileum by fermentation and putrefaction of material that has escaped digestion, creating carbonic acid, hydrogen, nitrogen, sulphurated hydrogen and marsh gases. And in proportion to the amount of this infectious matter and multiplicity of the bacilli, regulates the severity of the attack. And here in the ileum the bacilli meet with all the elements for multiplying and germinating, attacking the glands creating a necrotic substancce favoring a more poisonous gas to be absorbed by the patient.

It has been plainly proven that there is a specific micro-organism continuously associated with typhoid fever. Whether a spore is the result or not, has been doubted, but reasoning from analogy I am inclined to believe either a spore or a reproductive element less organic than t true typhoid bacilli is generated. And whether these spores or incomplete bacilli enter the blood or not, it is plainly demonstrated that a combination of necrotoc decomposed vegetable and animal poisonous gas does enter the circulation and produce symptoms diagnostic of typhoid fever. But hould these spores or reproductive elements enter the circulation and form or complete a typhoid baacilli in the serum, there could be no reorganization in the blood, from the fact the blood does not offer the necessary elements for a media suited for the organism. And if it did, the organism would be so continuous and productive as no patient could ever survive the disease. As it would necessarily be similar to a case of

acid gangrene, the patient becoming entirely sour, and could only live a short while.

Then in the ileum with fermentation and decomposition of vegetable and animal matter, that has escaped digestion, forming an acid culture media or we might term it, an aphrodisiac or erotic, we have the only place possible along the entire alimentary canal for organization and reproduction. It is claimed that there is only one sex of typhoid bacilli, and I am not outhorized to state, whether a male or female, but I rather believe it to be a male that impregnates the decomposed wast material suitable for the culture media for typhoid spores.

Our first symptom is a slight fever half or a degree, incrasing with the inflammatory condition of the glands, and with a very slight fver and no perceptible cause for same, I begin to prepare my patient for typhoid fever. The next and I consider the all important and most always present early symptom is a gurgling sensation in the right iliac region on deep pressure, and frequently a redness of the tip of the tongue and some times early in the disease, we have expecterataion of blood from the posterior nares. But from the first three symptoms and these alone, the fever may last from three to six weeks. The rose colored spots that appear from seven to ten days, spoken of by all the authorities, I so seldom, if I ever find them, that I never look for them now at all. However, my diagnosis is made out in three or four days, and treatment directed before time for these typhoid symptoms to appear—consequently I never have any of the alarming symptoms, or receive any deserving credit, as my patient will have a slight fever for three to six weeks and get well. I had much rather be in doubt of the reality of the discase than to stumble upon complications of a severe nature or warned by one of the family of a alarming hemorrhage.

Then to know the ileum is the seat of trouble, loaded with putrefactive ferments, the lements for the production and propagation of typhoid bacilli, it is reasonable to suppose by emptying the bowel we would get rid of effects and poisonous gases, wash out many spores and bacilli, and in this way hinder micro-organism to a considerable extent. And as any irritation or disturbance along the alimentary canal causes an increased peristaltic action of the bowels, rushing the undigested contents of the stomach through the bowels, would necessarily carry much of the food into the aleum undigested. So it would be unwise to load up the stomach to again supply the waste we have just gotten rid of Then the successful management is an early diagnosis, empty the bowels, and find a digestible liquid diet on first week of the invasion.

I am aware of the great difference and argument to feed a patient through this long continuous fever when it subsides the patient is able to get out of bed and go to work. But my argument is, very patient has a law of diet unto themselves, that one patient may live and do well on some diet that would be detrimental to others. Then rather than take chances on having a patient who can digest perfctly all we wish him to consume, we better not feed so extravagantly. We may have aa light case of typhoid fever as well as any other fever, owing to the amount of infection consnmed and the resistive tendency of the patient which only means the amount of waste and putrefaction in the ileum.

For the want of enough symptoms to justify the name of typhoid fever, I have heard doctors call it slow fever, continued fever, enteric fever, congestive fever, etc. But the most frequent and most dangrous mistake is malarial fever. Often typhoid has been treated two or three weeks for malaria, with calomel and quinine until the development of some grave typhoid symptoms, most frequently a hemorrhage. Then the doctor, to hide his ignorance, makes the assrtion that it has run into typhoid fever. Now, many typhoid symptoms may have developed for the want of proper treatment, but if it was typhoid at all, it was typhoid in the beginning. Recently we have a name very appropriate as a substitute for all those doubtful fevers; Paratyphoid, but I must confess I am perfectly ignorant of this disease. I only know para, is a prefix which signifies beyond, beside, near, the opposite of, etc., and I only mention this subject that through the discussion of this paper I may learn the true etiology and pathology of this fever. But until I know better I will consider it the same old dodge for a light case of typhoid fever. There are two diseases we might mistake for typhoid fever, malaria and incipient tuberculosis. The frequent hacking cough, rise of temperature in the afternoon, with subnormal temperature in the morning, having lasted a week or more, would indicate tuberculosis. Malaria, is more difficult, but with temperature higher than the initiary stage of typhoid fever, and yelding to a three or four days course of quinine would differentiate from a case of maalaria. We may have a case of typhoid fever, with a pronounced chill, occuring every day at precisely at the same hour of the day, with remittance of fever, but never intermittent due to the rapid absorption of toxic poison by the mesenteric gland, which was erroneously called typho-malaria.

The most and all important treatment is diet and control of tympanitcis, examine the

abdomen and if you have a distention of the abdomen, change your diet and continue to change every day until the public bones and ribs stand up prominent, the belly trofting, and nature will successfully do the rest. Distention of the abdomen, stands prominent as a danger signal, and should, and can be controlled through proper feeding.

I am aware of the fact, that I am entering the battlefield of the so called scientific medicine. But armed and equipped with natures paraphernalia I feel to fear no danger. Listen: you can have no hemorrhage without the bowels are distended with gas, stretching the mouths of the blood vessels open, giving no obstruction to free bleeding. You can have no perforation without the distention and pressure of gas against the weaken walls of the ulcerated gut. You can have no rose colored spots without the absorption of gas. You can have no muttering delirium without absorption of this poisonous gas, no subsultus tendinum, no carphology without the absorption of this necrotic and poisonous gaas, without the absorption of these gases and necrotic material, we will have a negative Widal reaction. To wait for a positive reaction to confirm our diagnosis, is a waste of valuable time and lessens the chances for recovery. I had rather grope in the dark to safety than to wait for light to face danger. No patient will have any nervous or cerebral troubles without the formation of gas. No patient should die without an accumulation of gas in the bowels. No patient need have this accumulation of gas if proper treatment is commenced in the first two or three days of the attack.

These gase are the result of decomposed putrefactive nitrogenous organic matter under the influence of micro-organism that has escaped digestive ferments, as the digestive ferments are more or less locked up by the disease.

Gentlemen upon the following statement hangs all the law and gospel of typhoid fever.

As stated, there are four elements necessary for micro-organism in typhoid fever, and to make any radical change in either of these elements would necessarily destroy all organism, as the law of regeneration is as specific in typhoid bacilli, as in any other life. and without a change in one or more of these elements, typhoid fever would continue indefinitely. Then our great endeavor should be, stop putrefactive elements entering the ileum. This can only be partially accomplished by feeding, which controls tympanitis and peristalsis the most serious complications of the disease. In controling tympanites, you hinder organism by the suspension of fermentation and putrefaction, this of course stops peristalsis, and in stopping peristaltic movement of the bowels, is like a splint to a broken limb; it answers two purposes, while the bowels are in a quet state will heal faster and also retain what effort nature has made in neutralizing the acid, by a pus formation of an alkaline reaction, which not only supersedes the acid media, but protects the raw surfaces from further attack of the bacilli, and the only medium by which nature choose to cure the patient.

And without this effort of nature to neutralize the acid with pus we would retain enough of all the other elements to continue the disease indefinitely. Then feeding would kep up peristalsis, remove the alkaline pus that nature has provided for the protection of the raw surface against the bacilli. Also bring down undigestible matter for decomposition and putrefaction, the life of typhoid bacilli. And should the patient get well, it would be in spite of all the doctor had done.

I believe if we could cause a perfect alkaline reaction in the ileum for forty eight hours, it would kill every typhoid bacilli in the bowels.

I wish to mention one other thing that possible some one may not have noticed, if you have a patient that has become affected very much by absorption of gas and becomes semiconscious, be sure to never let them be moved to an other room or to any other place in the same room, and it is not safe to change them in bed, as they invariably lose themselves and are continuously trying to go home, giving the nurse and attendants a great trouble to keep them in bed.

We all agree that typhoid bacilli attack the small intestines at the ileum and cause this peculiar fever, and that no two or three germs could create this disturbance. That we are necessarily compelled to admit that micro-organism is going on in the bowel. That this organism can't exist only in a purlefide animal and vegetable matter, proper temperature and in an acid media. That these essentials are no where found except in the ileum, and are products that has escaped digestion. That fever locks up the secretions and admits food to escape undigested, in proportion to the amount of fever. These, Gentlemen are my opinion and belief, based on practical experience, and I respectfully solicit the criticism of all who may choose to take issue. And in conclusion, may I say, if I have advanced one idea that may prove beneficial to my professional brother, I feel that I have well paid for a peins taken selection of notes pened here from a careful study of a life time practical experience and close observation of this disease.

NEWS ITEMS

Dr. George Blumer, 195 Church St., New Haven, Connecticut, is anxious to secure information from any Kentucky physicians who have any cases of infectious jaundice.

Dr. Blumer is making a study of this disease and we urge our physicians having cases of it to correspond with him.

It is especially pleasant to note progress in the establishment of hospitals in Kentucky. We have had the pleasure of seeing the new Logan Hospital at Barbourville. It was opened October 15th last. There are twenty beds, all in private rooms: photograph says a well equipped operating room, and there is a very complete kitchen and dining room in the basement. Dr. Logan, who is the surgeon in charge, has his office in the hospital and another office is also occupied by a dentist.

This institution is well equipped and is one of which Kentucky may be very proud.

BOOK REVIEWS

Diseases of the Ear, Nose and Throat, Medical and Surgical, by Wendell Christopher Phillips, M. D. Professor of Otology, New York Post-Graduate Medical School and Hospital; Surgeon to the Manhattan Eye, Ear and Throat Hospital; Fellow and Ex-President of the American Laryngological, Rhinological and Otological Society; Fellow of the American Otological Society; Fellow of the American Academy, of Ophthalmology and Otolaryngology; Member of the New York Otological Society; Attending Otologist to the Post-Graduate Hospital and Babies' Wards; President of the Medical Society of the State of New York, etc., etc.

Sixth revised edition. Illustrated with 578 half-tone and Other Text Engravings, Many of them original; including 37 full-page plates, some in colors. F. A. Davis Company, Philadelphia, Publishers. Price $8.00, net.

In the Nose and Throat section the operative treatment for chronic ethmoiditis, including the necessary illustrations has been revised.

Important additions have been made regarding the adult tonsil.

The operative treatment for intrinsic cancer of the larynx has been extensively elaborated and illustrated.

The chapters on Suspension Laryngoscopy, Bronchoscopy and Esophagoscopy have been revised under the supervision of Drs. Lynch and Jackson.

A brief description and illustration of the audiometer test for hearing has been introduced.

There has also been a revision of the methods of examination of the pus and blood in purulent otitis media and its complications.

In the department of general diseases I have thoroughly revised the subject matter of diphtheria, syphilis, asthma, and allergy and pollen therapy in hay fever.

The details of the Schick test and the New York City Health Department plan for its application are fully defined.

There is also a reference to social and community service work for the deafened.

Finally, cuts pertaining to improved methods and new instruments, number about fifty, have been introduced.

It has been the authors continued desire to thoroughly Americanize this volume, by giving preference to the achievements of American otologists, rhinologists an dlaryngologists, in the belief that wherever it may be read it should stand for American ideals.

Feeding, Diet and General Care of Children: A Book for Mothers and Nurses by Albert J. Bell, A. B., M. D. F. A. Davis Company, Philadelphia, Publishers. Price $2.00, net.

The subject matter is arranged upon a new and convenient plan. The latest trustworthy information being given in clear understandable language, including the significance of the Vitamines in relation to the feeding of Babies and Young Children.

The important subject of Food with reference to the Teeth has been especially emphasized. "Every effort has been made to impress upon Mother and Nurse the principles for the prevention of Disease."

Principles and Practice of Infant Feeding: By Julius H. Hess, M. D. Professor and Head of the Department of Pediatrics, University of Illinois College of Medicine; Chief of Pediatric Staff, Cook County Hospital; Attending Pediatrician to Cook county, Michael Reese and Englewood Hospitals; Consulting Pediatrician, Municipal Contagious Hospital, Chicago, Etc.

Illustrated, Third Revised and Enlarged Edition, F. A. Davis, Philadelphia, Publishers. Price $4.00, net.

The classification, nomenslature and pathoyenesis of the mitritional disturbances have been revised to conform to the latest researches. New chapters dealing with rickets, scurvy, spasmophilia, acidosis and anemias of infancy have been added.

Getting Ready to be a Mother: By Carolyn Conant Van Blarcom, R. N., Author of "Obstetrical Nursing" formerly Assistant Superintendent and Instructor in Obstetrical Nursing and the Care of Infants and Children at the Johns Hopkins Hospital Training School for Nurses. With an introduction by J. Clifton Edgar, M. D. and Frederick W. Rice, M. D., with seventy-five illustrations. The MacMillan Company, New York, Publishers.

In no sense does this book replace the doctor's care, it is merely a composite of advice about simple every day little things which the major-

ity of obstetricians give to the average, normal woman.

If every expectant mother followed the simple, practical advice which this book offers, the rate of injury and death among our mothers and babies would be materially lessened.

Text-Book of Pediatrics: Edited by Professor E. Feer, Director of the University Children's Clinic, Zurich. Translated and edited by Julius Parker Sedgwick, B. S., M. D., Professor of Pediatrics, University of Minnesota, Medical School and Carl Ahrendt Schherer, M. D., F. A. C. P., Duluth, Minnesota. 262 illustrations, first edition in English. J. B. Lippincott Company, Philadelphia and London, Publishers. Price $8.50, net.

The introduction of this work to the physician and student is made easy by the widespread and favorable acquaintance it has achieved among those who have studied on the Continent or have read it in the original. The preface to the first edition sets forth the value of a text produced by the collaboration of a number of authors, each a master of his branch of the specialty. The plan of collaboration has been carried on in the translation. Up to the present no similar one volume work has appeared upon the market.

A further distinct advantage is hte concise treatment of the subject matter. The arrangement is such that no time is lost in referring to any descriptive passage. The etiology, pathology, symptomatology and treatment are all complete, but as short as compatible with their purpose. The book covers the entire field of pediatrics as completely as more bulky volumes. The discussions of the individual disease conditions are absolutely dependable and the therapeutic measures advised are in line with the most recent accepted usage.

Due to the interest of the American collaborators much has been added to the original subject matter and, through the kindness of numerous friends, who know the book in the original, a large number of illustrations have also been added.

Clinical Symptomatology of Internal Diseases Part II Generalized Pain, by Prof. Dr. Norbert Ortner, Vianna. Only authorized translation into the English Language of the 2nd German Edition, by Francis J. Rebman, with an introduction by Thomas Webster Edgar, M. D., New York. Medical Art Agency, New York, Publishers.

"Generalized ain," Part II of Clinical Symptomatology of Internal Diseases, as translated from the original German, represents a complete symptomatology of all the painful sensations experienced by the human organism, with the exception of the abdominal region, which is discussed in a separate volume.

Prof. Dr. Ortner has made it possible by this book for the physician to appreciate the selectiveness of the symptom pain, and the text may be used as a guidance in the differential diagnosis of many pathological conditions that heretofore have been clouded by a multiplicity of vague uncharted painful sensations.

This book "analyzes pain," and may be used to great advantage by the physician when questioning his patient.

The more than kind reception accorded Part I, "Abdominal Pain," undoubtedly will serve as a fitting introduction to Part II.

Prof. Dr. Ortner has made the subject of generalized pain preeminently his own.

Clinical Diagnosis, Case Examination and the Analysis of Symptoms—By Alfred Martinet, M. D., Paris, France, with the Collaboration of Drs. Desfosses, G. Laurens, Leon Meunier, Lutier, Saint-Cene, and Terson. Authorized English Translation from the Third, Revised and Enlarged Edition, by Louis T. deM. Sajous, B. S., M. D., Philadelphia. With 895 Text Engravings and Several Full-Page Color Plates. Complete in two Royal Octavo Volumes. Volume I, Physical and Laboratory Diagnosis. F. A. Davis Publishers, Philadelphia.

The plan followed in this work is one of marked simplicity and, in the author's estimation, one well adapted to the requirements of everyday medical practice.

Correct and complete diagnosis is a sine qua non to rational and effective treatment, the latter, in turn, being the chief aim of medicine. From the pragmatic standpoint of relief and cure of the patient, what are the component parts of a correct and complete diagnosis? What are the commonest sources of error, those most readily avoidable by the adoption of proper technic, and those most reprehensible from the standpoint of moral rectitude? Forty pages of this work have been devoted to an introduction along these lines—indispensable, as the author views it—to the study of clinical diagnosis.

The process of diagnosticating disease involves two separate steps or stages:

1. Collation of the symptoms and signs of disease by interrogation and physical examination of the patient. This is the subject-matter of Part II of this work, devoted to the Technical Procedures of diagnosis. The latest methods of clinical investigation will be found described in this section.

2. Synthetic application of the data collected in the course of the clinical examination—a process of mental elaboration, correlation, and integration which will enable the observer to proceed with a varying degree of ease and precision from the symptoms to the actual disease. This subject is considered in Part III, entitled "Symptoms."

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ANNUAL MEETING, CRAB ORCHARD SPRINGS, SEPTEMBER 17, 18, 19, 20, 1923

Life History of Ovarian Hematomas of Endometrial Type.—Next to leiomyoma of the uterus, the pathologic conditions arising from the implantation of epithelium which escapes from the fallopian tubes into the peritoneal cavity Sampson believes probably furnish the most frequent pelvic lesions found at operation in women between the ages of 30 and the menopause. He has encountered thirty-seven cases with these lesions in170 abdominal operations for pelvic disease in women between 30 and 50 (20 per cent. plus); and six additional cases, three in women under 30 and three in women over 50. One of the latter had not reached the menopause. The epithelium primarily giving rise to these implantations is derived from or through the fimbriated ends of the fallopian tubes. It lodges either on the surface of the ovaries or on the peritoneal surface of the other pelvic structures, especially those in the culdesac, or on both the ovaries and the pelvic peritoneum, and develops into glands or tubules (adenomas) of endometrial (mullerian) type. Sampson discusses this subject in great detail and many excellent illustrations are appended. Sampson believes further that the implantation adenomas in the ovary derived from tubal a nduterine epithelium are the source of many ovarian cysts and carcinomas.

Indoor Motor Action—Gertz repeatead extensive-some observations made by Purkinje relating to dizziness, and long forgotten. The subject is placed on a disk rotating on its axis, and turns in the opposite direction, so that he does not change in reality his relation to the surround-i sgn. Although the vestibular apparatus is not irritated, yet after stepping down from the disk and taking a few steps, the subject feels himselm drawn toward the side toward which he was turning . Since he knows, that he did not have the intention to continue to turn, he may become dizzy. This experiment constitutes a new physiologic source of dizziness, being neither of vestibular no rof visual origin. The phenomenon resembles the experiment of the hand pressed against the wall, described by Salmon and Kohnstamm. Gertz modifies their experiment in an advantageous way. He distinguishes in direct motor inervation two parts: One constitutes the direct impulse to the eat; the other consists in arragngements of the nervous conditions which direct or end the motion. The vestibular apparatus and the cerebellum are parts of the second, which Gertz calls the system of pre-disposition. He believes that the exercise induces a predisposition for its continuation, and that this is responsible for the phenomena described. (In French.)

TO THE EDITOR:

I read your editorial on prescribing whiskey with great interest and while your ethical warning no doubt is in order, I wish to state an absolute scientific fact, which you probably will appreciate in future, for once I was young and now I am beginning to be old, and at no time have I been a drinking man. But the truth I will maintain while life is in me, as I understand the truth "the molecule of the kernel of the corn is the same in whiskey, the identical same, as the molecule of our daily bread we eat, 'the staff of life.'"

I am writing this, not because you, in a manner denied it's therapeutic virtues, but many years ago the authorities in the Medical Department in Washington failed to bring out this point. With great respect,

JACOB GLAHN.

IN MEMORIAM

The following resolutions were adopted by the Louisville Medico-Chirurgical Society, at its regular meeting March 9th, 1923. Dr. Frank C. Simpson was a member of the Medico-Chirurgical Society for more than thirty years. To the scientific side of the society his contributions were always practical, useful and expressed with the conviction that comes from personal experience; to the social side he brought a happy personality, always a cordial pleasant greeting and as disposition sensible, kindly and sympathetic. For many years he was the executive officer of the society and its long continued and harmonious success was due in no small degree to his tact, good sense and good taste.

Dr. Simpson was a doctor of the Old School, living largely for other with littel thought of his own reward or his own fame, a fine example of the family physician who to his clientele was not only a physician, but a kind friend and a wise counselor.

The Medico-Chirurgical Society extends to the family of Dr. Simpson its sincere sympathy and records on its minute book our high appreciation of his long and useful membership, and uor loving remembrance of him as a man.

S. G. DABNEY, Chairman,
LOUIS FRANK,
BEN CARLOS FRAZIER,
Committee.

Pneumococccal Influenza.—East discusses an epidemic of cases influenzal in type, in which the pneumococcus was the organism found in overwhelming predominance on examination of throat swabs by direct smear and culture in every case. Micrococcus catarrhalis and streptococci also occurred, but were in the minority, and Bacillus influenzae was not seen. Pneumococci were also the cause of such complications as occurred.

COUNTY SOCIETY REPORTS

Wayne—At a call meeting of the County Board of Health in connection with the County Medical Society, the following officers were elected: C. B. Rankin, president; T. H. Gamblin, vice-president; S. W. Bristow, delegate state meeting; C. B. Rankin, alternate delegate, state meeting.

C. B. Rankin moved that Dr. J. F. Young be continued as Health Officer and Secretary. All members voting for the motion.

J. F. YOUNG, Secretary.

Anderson—I am glad to report for the past year very little sickness, a small epidemic of Scarlet Fever and of Diptheria. We have also had a light form of Influenza, with very few complications.

At the regular meeting of the Anderson County Medical Society, the following officers were elected for the ensuing year: C. W. Kavanaugh, president, Lawrenceburg; J. B. Lyon, secretary-Treasurer, Lawrenceburg. The society meets the first Monday in each month.

C. W. KAVANAUGH, Secretary.

Jefferson—The passing of Dr. C. W. Kelly removes from our midst a co-worker of sterling worth, of exceptional ability and of wonderfully magnetic personality. Identified with medical education for half a century he firmly established himself in the profession as a faithful and efficient teacher, beloved and admired by each succeeding class as a master in his department, a friend and counsellor of wisdom, courage and conviction, whose broad vision imparted confidence to his ever cheerfully given advice. To this institution, an integral part of which he so long and so faithfully served, he brought much prestige and the esteem and affection of those whom he taught.

Big in body, big in mind and big in heart, his delightful personality and superlative qualities endeared him to each and every member of the faculty, whose love and regard for him it is our pleasure to record and whose sorrow and regret at his death our sad duty to chronicle.

His family has lost an affectionate head, the University a beloved landmark, the profession one of its distinguished leaders and the community one of its most valued citizens.

(Signed)

S. G. DABNEY
PHILIP F. BARBOUR
IRVIN ABELL
WILLIAM A. JENKINS
A. W. HOMBERGER
STUART GRAVES.

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EDITORIAL

HYGEIA

There can but one regret arise in the mind of any physician who sees the first number of Hygeia, a journal of individual and community hygiene, published by the American Medical Association; and that is, that it has not been published continuously month by month since it was first ordered by the House of Delegates in 1910. This first number is splendid. If every leader of public opinion, members of women's clubs, legislators, magistrates, citizens generally, could read the splendidly popularized articles in this issue and carry on the education through the months in its successors, there will result the greatest improvement in personal and community hygiene in these United States. Typographically, it is, of course, excellent. The general trend of its contents is simple and practical and yet they are written by such authorities and so plainly that they carry not only knowledge but conviction with them.

Every physician should consider himself a soliciting agent for Hygeia. He should have one on his own table in his waiting room constantly and should see that the leaders of his community know about it. Remember that it will do no good to the health of any particular community unless it has subscribers there. If the profession undertakes to make the subscription list to this Journal the largest of any published Journal in America, it can unquestionably accomplish its purpose for the people are interested in their health.

Congratulation to Dr. Vaughan and his associates.

CENTENARY OF LOUIS PASTEUR

The Committee on Commemorative Journeys in France under the patronage of the Ministries of Public Instruction and Public Works, whose New York address is 281 Fifth Avenue, announce that under the supervision of the French Government Louis Pasteur's Centenary celebration will give free access to many highly interesting official functions not ordinarily open to visitors.

Thus, in Paris, receptions will be tendered by the Pasteur Institute, by the School of Medicine, by the Department of Health, and by other civic and professional bodies. In Strasbourg, the International Hygiene Exhibition officials will join hands with the municipal authorities in welcoming the party; while the three best-known thermal stations of France—Aix les Bains, Evian and Vichy—have extended a special invitation.

Both Dole and Arbois, respectively Pasteur's birthplace and his youth's home town, will be visited, as will also the Argonne and other important battlefields and the great American cemetery at Romagne. Ten days of motoring through the Vosges, the Jura and the Alps will disclose the ravishing beauty of France's eastern ranges.

The time for the journey in France between July 11th and August 18th has been chosen because it is the period of the year when most professional men take their vacations. Those interested can leave New York as late as July 4th, and be back as early as August 25th.

This is a wonderfully interesting program, and we trust Kentucky will be represented.

CLINTON WAYNE KELLY.

The death of Dr. C. W. Kelly removed from the medical profession of Louisville and Kentucky a forceful and inspiring personality, altogether unique. He seemed to be endowed with perennial youth. His strong physique gave play to a buoyant temperament, which carried radiance wherever he went. To this was added a kind heart, which harbored neither ill-will nor malevolent intent. His was far from a negative character; he could be an inflexible opponent, but his path by choice was always in the sunshine.

Dr. Kelly was born in Henry County Kentucky, in 1844. He enlisted in the confederate army when a lad of seventeen. When the war drew to an end, he entered the Medical School of McGill University at Montreal, Canada. There he received the degree of M. D. and then went to Germany where he pursued post-graduate studies. Early in his medical pupilage he manifested exceptional proficiency in the study of anatomy. His wonderful memory was a great aid in this accomplishment. His anatomical studies embraced comparative anatomy, and his en-

thusiasm carried him far beyond the limited course.

He came to Louisville in 1869, and entered upon his career as a general practitioner and teacher of anatomy. In 1870, he was offered and accepted the professorship of Anatomy in the Louisville Medical College, (which was merged with the University of Louisville in 1908) where he served for almost fifty years. For a number of years, he was Professor of Anatomy in two medical schools, delivering four to six lectures every week, and the two sessions extending over a period of nine months.

Dr. Kelly was at his best in the lecture-room. The charm of his personality, his thorough knowledge of his subject, his genial way, his humor and wit, won the admiration of all his pupils. He had an exceptional capacity for remembering names, and was said to know by name every student attending his course. Hundreds of practitioners of medicine throughout the south and west hold his name in affectionate memory.

His death occurred on January 26th, 1923, after a brief illness with pneumonia. The funeral at Calvary Episcopal Church, of which church he was a communicant, was attended by a large concourse of friends and former patients, representing every station in life. His body was almost eighty years old; his heart was under forty.

He was the last of a galaxy of remarkable men who contributed much to the fame of Kentucky medicine. Among his associates and contemporaries were Galt, Gaillard, Cowling, the Yandells, Bodine, Palmer, Ouchterlong, Ireland, Holland and others of thirty years ago. They belonged to an era of great achievement, but the advance of medical science has supplanted the methods of that period with an entirely new order. With the best resources of the time, Kelly and his colleagues wrought nobly. They educated a generation of physicians and surgeons, some of whom attained distinction, while hundreds are now worthily engaged in the practice of medicine.

The old order has passed, and with it Kelly. We shall not see his like again.

L. S. McMURTRY.

"BIG MEDICINE"

The Louisville Times pays the following editorial tribute to Dr. Kelly:

No newspaper column can adequately present the genius of Dr. Clinton W. Kelley who died this morning. The limits and regulations of obituary notices are too cramped for his big mind and heart and soul. It will be many a year before Kentucky sees such intellect and kindliness, such wit and humor as were combined in this extraordinary man.

Few among the general public realized how fine a craftsman Dr. Kelly was. His aptitude in anatomy delighted the professors under whom he "learned his bones." American physicians respected his ability in class-room and sick-room. To many Louisville families he was so much a part of the sun of life and shadow of death that he seemed close kin. The great voice, the booming laugh, the huge frame and kindly hand were gratefully known in the sick-rooms of this city for fifty years.

To social association Dr. Kelly brought that positive radiance he gave to every activity in which he was engaged. A fine discrimination in wit was his, and his diction came from the great pens and minds of mankind, with which he was familiar to a remarkable degree. But surmounting and suffusing every quality he had, Dr. Kelly was one of the most kindly of men; most cheerily he acknowledged the sorrowful state of nature and valiantly wrought to make it better.

ORIGINAL ARTICLES

GASTRIC AND DUODENAL ULCER.*

By R. M. EVANS, Louisville

In reviewing the literature on stomach cases we find that for several hundred years physicians have known of the presence of gastric ulcer, but it is only within the last hundred years that ulcer has been known to exist in the duodenum. (Travers).

Abercrombie, in 1830, noticed that distress came not with food but with it passing from the stomach. Rehfuss, Carlson and Hamburger have carried on work to show that the height of the pain and distress is not at the time when the acid concentration is greatest, but when the intra-gastric and intra-duodenal pressure together with muscular contraction are at the maximum.

Gibson, in 1858, discussed the early treatment. Bucquoy, in 1887, was able to make a diagnosis before hemorrhage or preforation, and consequent death had revealed the cause and nature of the ailment. From that time on—as Lemon states, stimulated by Moynihan's report, in 1900, of his first operation for duodenal ulcer, by Weir's presidential address on perforating ulcer of the duodenum to the American Surgical Association in the same year, and by Mayo's report in 1904, the advance in the knowledge of the subject was rapid and the interest all absorbing.

The opinion prevails among clinicians and surgeons of the widest experience that the

*Read before the Bullitt County Medical Society.

patient's history is of primary importance. There is good reason for maintaining this opinion. Moynihan's dictum that the diagnosis of a duodenal ulcer may be made by correspondence is criticized by some. In the majority of cases I am sure it can be done with seldom a mistake, as rarely do you find other lesions giving the typical syndrome of duodenal ulcer. I will venture to say, a clean cut history—elicited and interpreted by a physician who has had a wide experience—will arrive at a diagnosis in around 90% of cases. 3 to 5% of cases give no evidence of their trouble till maybe a hemorrhage or perforation or post-mortem examination, reveals the malady.

This afternoon I saw a case in consultation which had developed a subphrenic abscess from perforation of an ulcer on the posterior-wall of the stomach. He gave no previous history of trouble. At operation the appendix, strange to say, was adherent at the ulcer site trying to plug the hole in the stomach.

This will not hold good in cancer of the stomach. The roentgen method has its most unfailing application in the recognition of this condition, and in the frequent detection of gastric ulcer undergoing malignant change. Besides, it usually gives an index not only as to location in such cases, but also as to type, extent and operability. Negative Roentgen findings in cancer suspects are most convincing evidence of the absence of disease. However, x-ray examination should not be made until a careful history has been taken and the complete physical and laboratory examination made. Otherwise erroneous conclusion may be drawn.

In the management of stomach cases I shall try to outline a method that has proved very satisfactory. If I take a patient through a routine stomach examination it would give you a more definite idea of how to arrive at a diagnosis of gastric or duodenal ulcer. One often has to rule out gallbladder and appendiceal disease, as well as other conditions. In a series of 1751 cases operated by Oehsner there was associated in 50% of them either gallbladder or appendiceal disease or both. From the experience of numerous eminent clinicians and surgeons his findings have been verified.

Other things to be eliminated are tuberculosis, Bright's disease, pernicious anemia and relatively rare lesions of the stomach such as linitis plastica, polyposis or papillomata, myomata, dermoid cysts and sarcomata, gastric lues and gastric tuberculosis. The latter may be a part of a tubercular gastro-enteritis or generalized tuberculosis,—other conditions such as tuberculosis of the cecum and lower ileum, and appendix and Meckel's diverticulum. The latter condition is rarely ever diagnosed clinically—but should always be considered in cases after opening the abdomen in which the symptomatology can not be accounted for in the appendix, gall-bladder, stomach or duodenum. The diverticulum is usually within the last two feet of the ileum and most often at about one foot from the ileo-cecal valve on the free surface—i. e.—opposite mesentery. It is supposedly found in about 2% of human beings and results from the failure of normal closure and obliteration of the intra-embryonic segment of the vitelline duct. The usual band leading from the tip of the diverticulum to the umbilicus is the common cause of trouble by mechanically obstructing the bowel. However, it is subject to inflammation of all degrees like the appendix and all coats of the bowels are present.

Your patient presents himself usually complaining of "stomach trouble," or dyspepsia, indigestion, hyperacidity,—various terms used loosely by both layman and doctor. Many of the laity have the idea that "indigestion" is a diseased entity in itself—when as a matter of fact they should be told it is a mere symptom, and most commonly indicative of one of three things—trouble in the appendix, gall-bladder or stomach, and often times of a surgical nature.

Age of patient is important. In ulcer it usually runs from 25 to 45—most are found in the fourth and fifth decade. In carcinoma the age is usually from 40 to 60. Moynihan reports 31 cases of duodenal ulcer of the bleeding type in children below four years of age. In 28 the patients were less than 8 months old. Several fatal terminations took place within a few hours following birth. The clinical picture was that commonly associated with melena neonatorum.

Sex. Males are much more commonly affected in the ratio of 4½ to 1 in Oehsner's series, according to Moynihan 6 to 1; and W. J. Mayo—5 to 1. An interesting fact to be noted here is that the first portion of the duodenum in the female lies more or less transversely, while in the male it is almost vertical, consequently this portion of the duodenum in the former is much more easily bathed with the alkaline bile and pancreatic juice. So naturally the question arises how big a part this plays, if any, in explaining the more frequent occurrence of duodenal ulcer in the male.

Race. The Caucasian family appears to be peculiarly prone to gastric and duodenal ulcer. In seeing thousands of stomach cases, from the clinical standpoint, in the gastric and x-ray laboratories, and at operation, I do not recall but two cases of the colored race.

These were in negroes, a male and a female, about the age of 35.

Heredity. Plays no part.

Seasonal Occurrence. Seasonal occurrence of attacks is present in the majority of cases and usually Spring and Fall.

In discussing further etiological factors, infectious diseases and focal infections seem to play a prominent part. In Ochsner's series 56% gave a history in accord with this. Various authorities are of the opinion that ulcers are the result of infective thrombi lodging in the terminal blood vessels of the stomach. Reeves has shown in the blood supply of the stomach vessels on the lesser curvature where most ulcers occur, are more or less terminal with little or no anastomosis. The results of his work was published in S. G. and O. some two years ago. These thrombi Rosenow has proved to his own satisfaction are infected with a certain group of streptococci which grow in an acid medium and are the direct cause of the ulcerations. He has produced gastric and duodenal ulcers in a very large per cent of instances by injecting into the blood stream of animals (rabbits, etc.) bacteria derived from gastric and duodenal ulcers. In like manner he has produced gall-bladder and appendiceal diseases. In 50% of gastric and doudenal ulcers, concomitant disease of the gall-bladder or appendix is agreed upon by eminent surgeons, and the freely connecting lymph channels between these viscera is a fact of no mean interest. Furthermore, pyloric spasm due to vagus and sympathetic irritation may be caused by gall-bladder or appendiceal disease and as a result of disturbed circulation in and about the pylorus may be a predisposing factor in producing gastric and duodenal ulcer.

History Proper

First allow your patient to tell his own story complete—then proceed to elicit your own history which of necessity in these cases requires some more or less direct questions. Many cases are overlooked on account of carelessness in history taking and routine laboratory and physical examination.

Duration of Complaint:—How long have you had trouble—how many years? Usually 10-15 years. The average time in a large series reported by Lemon was found to be 12½ years. Due to mildness of symptoms and short duration of attacks at first patients may go for several years without consulting a doctor, and again you often elicit the history that he has received treatment for "indigestion" for some time from various physicians.

Periodicity—of attacks will be found in 82%, or more, if the cases are uncomplicated, due to recrudescences in the activity of the ulcer. After complications have arisen the symptoms are usually continuous. These attacks last from one to eight weeks, but the usual duration is three or four weeks, and in simple cases are free from symptoms in the interval. This is characteristic of duodenal ulcer and with a history extending over several years in which the patient is not free from symptoms, but has had trouble daily even from the onset, is very apt to be a neurotic—or else, less frequently, have some other malady to account for the syndrome. In the neurasthenic, belching and bloating will stand out as the chief feature, but seldom with regurgitation of food or liquids, and scarcely ever will there be a sensation of sourness or burning, or anything to indicate hyperacidity. Furthermore, the test meal will most always show low acids or may be an achylia (anacidity).

Chief Complaint:—as a rule is pain. Epigastric pain or distress is present in 96% of cases. Night pain is 17%. It is usually described by the patient as dull aching in type or gnawing in character, usually coming three to six hours after meals in duodenal ulcer, and may be from a few minutes up to two hours in gastric ulcer. The amount and character of food and whether liquids or solids are taken has something to do with the time interval between ingestion and onset of pain. It may be two or three hours or more in duration till relieved. The pain is practically always located by the patient in the "pit of the stomach,"—occasionally down as low as the umbilicus, usually radiates around to the right or maybe to the left—and oftentimes straight through to the back—and occasionally to the lower abdomen. Most all ulcers on the posterior wall of the stomach and on the posterior surface of the duodenum have concomitant pain in the back due to associated involvement of the pancreas. The pain at times, with the perforating type, is very severe, and especially if the acute perforating. It may be most agonizing, doubling the patient up, he sits in a crouched position in bed on his knees, hands over the epigastrium, beads of perspiration on the brow, moaning or begging for relief, which may only be alleviated by repeated hypodermics. Later on, if stomach contents escape and peritonitis supervenes, the pulse becomes rapid and other accompanying signs of a general peritonitis. Many patients have I seen sent to the operating table for gall-stones and upon exploration the gall-bladder is found normal and further investigation revealed a perforating ulcer of the duodenum.

The ordinary pain is usually relieved by food; 80% or more will have food relief.

Many are relieved by alkalies or a glass of hot water, or milk, by vomiting, or lavage,—maybe by posture, or pressure or application of heat over the epigastrium. Food and soda relief stand out pre-eminently with next in importance, emptying the stomach by lavage or usually vomiting and oftentimes induced by the patient inserting finger into throat. Not infrequently a patient states a piece of chewing gum, or a few grains of pop corn, or a small cracker, will afford relief. In short any thing to dilute, neutralize or remove the acid contents or to close the pylorus, will give relief. Without pain one must go slow in making a diagnosis of a gastric or duodenal ulcer. Pain is paramount of all symptoms. One should remember in the perforating type of ulcer which is apt to be confused with gall stone attacks, that gall-bladder disease is five times more frequent in women and duodenal ulcer about five times more frequent in men. And allow me to say here, I have seen many patients who were young adult men sent in for suspected gall-bladder disease, who had had recurring attacks of acute appendicitis with high-lying retro-cecal appendices. So in upper abdominal cases in young men incline toward the appendix or duodenum especially so when you get a history of confinement to bed for two or three days following attacks. In patients "fair, fat and forty", the percentage is in favor of gall-bladder. Bearing in mind these simple facts, will often save you untold embarrassment. It is usually the astute interne who has been fed up on text book descriptions and iron clad rules, which all have exceptions, given to him by his preceptors without the exceptions, in his eagerness to impress the embryo doctors. We all had to go through this stage, but if we may point out our own errors and mistakes so that others may escape them, we are doing just so much for suffering humanity.

The appetite is usually good, with but few exceptions, and those are in patients with complications such as obstruction, but many abstain from food during the attacks on account of fear of pain, that is inevitable. Most all give a history of qualitative as well as quantitative distress. Protein foods requiring hydrochloric acid and pepsin for digestion, especially meats, greasy and fried food, pastries, acid foods, pickles, sauer kraut, highly seasoned foods and condiments, are much more apt to cause distress: Carbohydrates, and in particular cabbage, potatoes and raw apples, are especially prone to cause trouble in gall-bladder disease.

Loss in weight with attacks may be from five to fifteen pounds or more, and regained in the interval. In complicated cases there may be as high as forty pounds or more loss in weight with little or no desire for food. These usually have very marked or almost complete obstruction, or may be extremely emaciated and dehydrated with the characteristic flabby dry skin.

Pyrosis, waterbrash, sour stomach, heart burns, belching and bloating, eructations of sour gas and liquids,—usually come on two to five hours after food, and reach the maximum severity at the same time as that of pain. Regurgitation of sour liquids and food particles into the mouth is a frequent occurrence. In 80% or more of cases will these phenomena be manifest. Belching often affords temporary relief.

Nausea is present in many, and vomiting in various degrees in 25% of cases, and the latter is a most unfailing sign of pyloric obstruction when oesophageal diverticulum, cancer of the stomach and cardiospasm are ruled out. In oesophageal diverticulum one can often palpate a fluctuating mass in the lower cervical region and with a history of regurgitation of food and liquids, is a pathonomonic sign. The diagnosis is easily confirmed with the patient under a fluoroscopic screen while swallowing a thick barium paste. In cancer of the cardiac end of the stomach and in cardiospasm, they are easily ruled out on the history and x-ray examination, cancer of the cardia giving a dilatation of the oesophagus with irregular filling defect, while cardiospasm gives a regular large fusiform dilatation with no filling defect.

Ochsner reports vomiting present in 80% of his series and only some 25% had obstruction. In my experience this is quite too high. It is a symptom of import and usually prima facie evidence of obstruction, or very rarely marked pylorospasm due to other cause than an ulcer or carcinoma. Emesis may come within a few minutes after ingestion of food or as late as eight to twelve hours or longer in marked obstruction—so called delayed vomiting. Not seldom one recovers tomato seed and skins, raisin skins and other food particles the next day after food has been eaten at the noon or evening meal of the previous day. A few cases of obstruction and retention do not vomit, and they are very prone to complain of a sense of nausea. These will be detected when the test meal is recovered and also when screened for residue six hours after a barium or bismuth meal. Vomiting usually affords great relief and almost invariably will you see a retention after the test meal and a residue after the six hour barium meal, and corresponding reports on the basis of one to four. The vomitus consists of food and liquids—maybe undigested food particles, the character depending on

the time interval since ingestion,—is very sour, with a rancid odor and somewhat offensive if long retained. Often times dark red blood (acid hematin) will be recovered in varying amounts. Small clots with the familiar "coffee ground" appearance may be found especially in late carcinoma.

Hemorrhage—In 25% the ulcers are of the bleeding type. In only 10% of duodenal ulcers there will be hematemesis—but melena three or four times more frequent and always occult blood in the stool. In gastric ulcer hemorrhage is usually not so profuse but may be copious and alarming. Hematemesis is more common and the feces may or may not show occult blood. One must not forget the so-called gastro-toxic hemorrhage found in 5 %of gall bladder and 2% of appendiceal cases. Many duodenal ulcers have profuse and serious hemorrhages with weakness, vertigo, breathlessness and fainting and maybe confined to bed for several days or weeks on account of the complete exhaustion from the sudden marked secondary anemia. One patient bled till his hemoglobin was 26% and oftentimes they have to be transfused before or after surgical interference or both. I recently had a patient with a hemglobin of 28%, and a red count of 2,850,000, the low hemoglobin index and blood smears ruling out pernicious anemia. Doctor John B. Murphy used to stress the question of sudden copious hemorrhages in these cases, as manifested by weakness and collapse, and occasionally a patient with this history and absolutely no symptoms of chronic dyspepsia, pain, etc. or other evidence, presents himself, and not until a thorough examination do we arrive at the cause of his hemorrhage. Likewise patients with secondary anemia due to bleeding hemorrhoids may come to you complaining of vague symptoms such as weakness, anorexia, loss in weight, etc., with no idea his condition is due to his rectal condition. He is not aware of the enormous amount of blood he is losing. Ochsner's series showed gross hemorrhage in 33% of cases, hematemesis or melena, the latter being three times as frequent, 40% showed chemical blood in the feces.

Bowels—Constipation is the rule and particularly during the attacks and repeated use of cathartics is necessary to obtain in proper evacuation of the bowels. Some require a daily laxative. The constipation is due to the excessive hyperacidity, the intestinal digestive procedure being retarded and peristalsis slowed, accompanied by gas and distension of the bowel. The classic tarry stools subsequent to hemorrhage have already been spoken of. The essential features from the standpoint of the anamnesis have been discussed. But here the question of differentiation between gastric and duodenal ulcer may be considered. Some authorities criticise the idea, and the main reason therefor, I think, is because they have based their opinion on histories that have been taken by inexperienced assistants, and, furthermore, from the fact that duodenal ulcer is five times as frequent, and as a consequence the gastric ulcer syndrome is minimized. I firmly believe, with a history of pain immediately or within the first hour after food, and repeated attacks of hematemesis, and the point of exquisite tenderness to the left of the mid-line and on a higher level, and maybe with a history of the pain being aggravated and not relieved by food, one is quite justifiable to suspect a gastric ulcer rather than duodenal. Morever, I have seen gastric ulcers diagnosed clinically repeatedly and the next morning confirmed by x-ray examination—despite the criticism of reputable surgeons who may never come in close contact with the patient, and, furthermore, do I distinctly remember three patients with a double lesion—both gastric and duodenal ulcer, which were clinically diagnosed. In discussing these cases the idea was considered absurd by some, presumably because such a diagnosis would be considered paradoxical—epigastric pain a few minutes after food and pain three to five hours after food, with aggravation of pain by food, and with food relief. But the long duration of these cases with a scrupulously elicited history—revealed the fact that the gastric and duodenal syndromes would alternate at times—the attacks being due to recrudescence of the ulcer activity on the gastric side during the interval of the duodenal ulcer—and vice versa. The examining physician had the distinct pleasure of laughing last at the x-ray personnel for they were compelled to confirm the diagnosis in two instances and not until the third patient was operated was the clinician substantiated.

Physical Examination

A thorough detailed physical examination is quite essential in all stomach cases. Diligent search should be made for foci of infection. The nose and throat should be examined by a specialist. Probably in more than 60% of cases will you find a pyorrhea (alveolaris) and oftentimes it is very pronounced. George Eusterman has stressed pyorrhea which is so prevalent in ulcer cases, and suggests the possibility of the pus from the mouth carrying this special strain of streptococci to the stomach and there finding lodgment in the folds of the gastric mucosa and by direct contact starting the ulcer. The care of the teeth in these instances should never be neglected both before and after operation, and

the aid of a competent dentist is to be urged. Careful inspection of the skin and mucous membranes should be made. They are so often pale from secondary anemia, and the skin dry and parched from dehydration. Examination of the skin and sclera in good day light for icterus should never be overlooked, the pupillary reflexes should always be tested for light and distance, and the various reflexes deep and superficial, as well as station; and if anything suggestive of a central nervous system lesion, a competent neurologist should be consulted.

The neck with reference to glands and the thyroid should not be overlooked. Careful routine examination of the chest, and if necessary an x-ray, especially in cases presenting any symptoms or signs of a pulmonary lesion. A routine blood pressure taken, and temperature and pulse noted.

Examination of the Abdomen—will usually give you the most valuable data. On inspection the abdomen may be distended, due to gas in the stomach and bowel. A visible peristalsis from left to right is often to be encountered in patients with pyloric obstruction, and especially in malignant cases with marked emaciation. This is a very important physical sign when found.

On *palpation* fluctuation and the succession splash may be elicited due to a dilated stomach partially filled with gas and liquids. In cancer of the stomach the characteristic ridge may be palpable under the right costal margin slipping under the tips of the examining fingers as the patient takes a deep inspiration. In duodenal ulcer usually you find a single point of exquisite tenderness just to the right of the mid-line and about 2 to 4 cm. above the umbilicus. In gastric ulcer the tenderness is usually higher and to the left of the mid-line, close to the left costal margin. In many cases on deep palpation there is more or less definite tenderness over McBurney's point, and over the gall-bladder due to chronic appendicitis or cholecystitis. On percussion the note is usually tympanitic.

On combined percussion and auscultation the stomach outline is often increased and can be made out after inflating the stomach by the use of a Davidson syringe, a routine which is practiced by some, after the patient has had his test meal, and before going to the x-ray room. The succession splash has already been mentioned in connection with palpation, aided by ordinary auscultation.

There are no other items of special interest or importance in the physical examination of a stomach patient, save that of the rectum. A thorough digital examination should be made after inspection while separating the buttocks and having the patient bear down as if in act of defecating. Little rubber finger cots should be kept constantly in the examining room, as they are quite efficient in preventing soiling the finger and are inexpensive and can be discarded after use. In many cases of cancer of the stomach metastases can be felt at the end of the examining finger high upon the so-called rectal shelf, and this may save the patient a useless operation. On completion of the history and physical examination including collection of blood for Wassermann, hemoglobin, white blood count, coagulation time and smear, also a twenty-four hour specimen of urine, the patient is prepared for an Ewald test meal at 7 a. m. the following morning, taking a dose of castor oil in the evening to sweep out the intestinal tract. (If there is any indication for a colon x-ray, this should be made before the x-ray of the stomach). The evening meal should be an ordinary one including some kind of meat and about twenty seedless raisins. At 7 a. m. the patient is given 500 c.c. of distilled water and six arrow root biscuits (National Biscuit Company), or a good sized piece of dry toast. In ½ hour a Rehfuss tube is inserted and 15 c.c. of the stomach contents withdrawn. The Rehfuss tube is undoubtedly the best one to use, as it is easily introduced and there is no danger of perforating the oesophagus or stomach as force cannot be used, and, furthermore, it permits the withdrawal of contents at regular fifteen minute intervals without removing and reinserting the tube. 15 c.c. are removed at the 45-minute and the one hour intervals and the rest of the contents at one hour and fifteen minutes. In this routine, mistaken diagnosis of achylia are not made. On introducing the tube much valuable information may be obtained. The attitude of the patient and the ease or difficulty with which it is taken are important points. A neurotic will almost invariably complain at the sight of the tube, fight it or even refuse to take it, and oftentimes will pull it out immediately after being introduced. Obstruction may be met in cancers of the oesophagus and food and liquids may be returned before entering the stomach in this case or in oesophageal diverticulum or cardiospasm. The distance from the point of obstruction to the central incisor teeth should be marked, measured and recorded. Ordinarily a total of 100 to 150 c.c. of contents is recovered. If 200 to 500 c.c. are recovered there is pretty apt to be obstruction with some food particles including raisin skins and bits of meat. Many cases will return even 1,000 to 2,000 c.c. or more if there is complete obstruction, and several liters of water may have to be used to wash the stomach clean. The amount of retention is recorded on the basis of 1 to 4, and this will almost invar-

iably correspond to the degree of vomiting if present and to the residue six hours after the barium meal. In neurotics very small amounts are returned and oftentimes the stomach is reported empty—and no contents recovered. Fresh blood may be noted at times on withdrawing the tube in oesophageal cases. Dark red blood in varying amounts may be recovered from the stomach in gastric ulcer and less often in bleeding duodenal ulcer, and old blood with small clots or the characteristic coffee ground material in cases of carcinoma.

Gastric Analysis—Graham states about three fourths of the ulcers that come to the operating table do not show the high acids as commonly thought to be the case. Age and duration of symptoms are very important. Do not expect high acids in a patient around the age of 45, who has had trouble ten or twelve years. The cases of extreme hyperacidity are usually found in young patients with developing ulcers. Above 50% of cancers will show no free hydrochloric acid with very low total acidity. Oftentimes the acids will help in diagnosis if high or low, but do not depend too much on the test meal from this standpoint.

Graham gives the following convincing reports:—

Ulcer Of The Stomach And Duodenum
250 Cases

Free hydrochloric acid present in 237 cases; absent in 13 cases.

Fatal Acidity.
Below normal 28 cases.
Normal, (40-60)—106 cases.
Above normal, (60-80)—67 cases.
103 cases, (80-100)—31 cases.
(Above 100)—5 cases.
(40-60)—75 cases.
Free hydrochloric acid:
Below normal, 23 cases.
Normal, (20-40)—102 cases.
Above normal, 112 cases.
(60-80)—26 cases.
(Above 80)—11 cases.

Blood present	49 cases
Lactic acid	53 cases
Food remnants	73 cases
Tumor	3 cases
Blood alone	10 cases
Blood and lactic acid	21 cases
Blood and food	6 cases
Blood, lactic acid, and food remnants	12 cases
Lactic acid alone	8 cases
Lactic acid and food remnants	12 cases
Food remnants without blood or lactic acid	43 cases
Prolapse or dilatation present in	118 cases

Cancer Of Stomach
150 Cases

Free hydrochloric acid present in	70 cases
Average age	48 years
Duration of symptoms	4½ years
Absent in	80 cases
Average age	54 years
Duration of symptoms	9 years

Free hydrochloric acid present without blood, lactic acid, or food remnants in 24 cases.

Free hydrochloric acid present without blood, lactic acid, or food remnant in 46 cases; in 37 of these cases no palpable tumor present; 33 of these cases had palpable tumor present (blood alone 15 cases).

Blood present in 80 cases; Blood and lactic acid, 20 cases: blood and food remnants, 15 cases; blood, lactic acid, and food remnants, 30 cases.

Lactic acid present in 64 cases; lactic acid alone, 11 cases; lactic acid and food, 3 cases.

Food remnants present in 63 cases.

Food remnants present without blood or lactic acid in 15 cases.

Palpable tumor present in 79 cases.

In Ochsner's series average free hydrochloric acid was 49. In 2% hydrochloric acid absent. Highest free hydrochloric acid was 190. In complicated cases average free hydrochloric acid 54, total acidity 78. Highest total acidity 255. In 1.2% free hydrochloric acid was absent. Graham reports only 5 cases with a total acidity above 100. The highest total acidity I recall was 110.

In a series of 275 duodenal ulcers that came to operation, reported by Eusterman hyperacid gastric contents were noted in 80%. In the above with 108 gastric ulcers added the percentage of hyperacidity was 72%—so it appears that only 50 cases, or 46% of the gastric ulcers, showed hyperacidity. 2.8% showed anacidity.

After the test meal with the stomach washed clean, the patient is sent to the x-ray laboratory shortly after 8 a. m. when a breakfast is given consisting of whole wheat hearts cooked in a double boiler with an admixture of two ounces of barium sulphate and served with skimmed milk. He returns six hours later and is screened for a residue, which if found is graded on the basis of four and will almost invariably correspond with the grading of the retention from the motor meal.

Then an eight ounce mixture of barium in a mug is given and the patient instructed to drink same, while he is watched behind the screen as it goes from the oesophagus into the stomach. If oesophageal diverticulum stricture, or cancer,—or cardiospasm or can-

cer of the cardia is suspected, a thick paste is given. The stomach is closely observed as the barium enters and fills it. The size, shape, motility, peristalsis, outline, etc., are noted and especially do we watch for filling defects, niches, accessory pockets and incisurias. Most all ulcers will reveal a niche, and maybe an accessory pocket, and an incisuria opposite the niche. In cancer we get the characteristic filling defect with the corresponding palpable tumor.

Next the stomach is manipulated and measured with the right hand from left to right to fill the duodenal cap, assisted by left hand if necessary. In about 80% of cases of duodenal ulcer there will be a visible filling defect with a deformed duodenal cap, and possibly an accessory pocket.

A deformed duodenal cap, after being sure the cap is filled, means almost invariably a duodenal ulcer. There is only one exception to the rule, viz: adhesions about the duodenum causing a deformity—usually due to a pericholecystitis or pancreatitis.

Location—90% of gastric ulcers according to Will J. Mayo in a paper in 1907 are to be found in the pyloric end of the stomach which contains only one sixth of the gastric mucosa. Warbasse states 80% are in the pyloric end. 80% are on the lesser curvature. Very few are on the posterior wall and fewer on the anterior wall.

90% of duodenal ulcers are in the first two inches of the duodenum beyond the pyloric vein and usually on the anterior-superior wall of the gut.

90% of carcinoma of the stomach are in the pyloric end and practically all of the rest at the cardiac end.

It has been shown by Jefferson that when a considerable quantity of liquid is taken into the stomach it passes by the canalis gastricus along the lesser curvature and directly to the duodenum without mixing with the food mass in the fundus.

This is exactly the situation of 85% or more of all ulcers and cancers of the stomach and ulcers of the duodenum. Food is cooled during mastication but hot liquids pass on down and are hot when they reach the stomach and duodenum, consequently the question arises if this may be considered a factor in causing ulcer and cancer. Primitive men and animals do not take their drinks hot and seldom have cancer. A certain tribe, natives of some province in India, have the custom of wearing little ovens filled with coals next to their lower abdomens in cold weather and these people are quite subject to cancer in this region. Chinese men who eat hot steaming rice at the first table are quite frequently afflicted with cancer of the posterior pharynx, but the women never, as they eat cold rice at the second table.

Every gastric ulcer is a potential cancer but rarely, if ever, does a duodenal ulcer undergo malignant change, unless it encroaches upon the pylorus and invades the gastric side. The stomach is the most frequent site or organ in the body for cancer. 38% of all cancers in man (men or women) are found in the stomach according to latest reports from authorities, and as some authorities say as high as 75% of all cancers of the stomach have their origin in ulcers, we are naturally impressed with the importance of such a lesion as gastric ulcer, and especially so since we know that in all men over forty years of age, one in every thirteen, succumbs to cancer, and one woman in every eight, past forty years, dies from cancer, it gives us the realization that all precancerous conditions should be taken care of without procrastination. In the recent war, the American Society for Control of Cancer, reports we lost all told 80,000 men from all causes, disease, killed in action, etc., in a period of two and one half years, but during that same time in the continental United States 180,000 people succumbed to cancer, and it is estimated some 50% of these deaths could have been prevented. To further impress the importance of gastric ulcer, let me say that in a series of 3,535 cases of cancer of the gastro-intestinal tract reported by Judd that 1689, almost 50%, were in the stomach.

1822 were in the large bowel and rectum, and only 24 in the small intestine—of which five were in the duodenum, 11 in the jejunum, and 6 in the ileum.

In the way of conclusion allow me to touch upon treatment.

First—Cancer of the stomach and other benign and malignant tumors are surgical,—the usual operation is the anterior Polya. If metastases have occurred, only an anterior gastro-enterostomy should be done as a palliative measure, for relief or obstruction.

Second—In ulcers on the gastric side, I should say they are all surgical and the ideal method is removed by the actual, electric or Paquelin, cautery or resection, and followed by a posterior gastro-enterostomy. In some cases where the ulcer is extensive and maybe with an organic hour-glass stomach, sleeve resection or partial gastrectomy should be considered.

Third—In duodenal ulcers some may be treated medically, but after a thorough try-out on the Sippy regime with no results, they should be considered surgical. Moreover, the average case that comes to you has had trouble some ten to fifteen years. Certainly all perforating ulcers, and various authorities

claim 50% of all peptic ulcers will eventually perforate, and bleeding ulcers are surgical, and all cases with obstruction. Furthermore, the end-results from posterior gastro-enterostomies for duodenal ulcers are as pleasing as from surgical procedure in any other class of patients. 90% are cured and around 80% of the rest are materially improved.

Could we ask more from an operation in which there is the low mortality of anly about 1%?

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THE RECTUM IN ITS RELATION TO DIGESTIVE DISORDERS.*

By BERNARD ASMAN, Louisville.

To consider in detail all of the more or less definite digestive disturbances which may be directly or indirectly traceable to rectal pathology, would be impossible in the time allotted this paper. "Unquestionably, there are few diseases, either constitutional or local, which are not attended to a greater or lesser degree by some disturbance of the digestive organs." (Kemp).

Anatomically, the anal canal (or anus) together with the rectum constitute the terminal portion of the gastro-intestinal tract. Some confusion is apparent as to just how much (in inches) of the terminal segment should be designated as the rectum. Various classifications have been suggested, but the one offered by Tuttle seems the most logical, as it gives definite limits to the anal canal, the rectum, and the sigmoid flexure or pelvic colon.

The anus or anal canal extends from the margin of the true skin to the free borders of the semi-lunar valves of Morgagni and, although usually considered as a simple orifice, really includes all that part of the tract below the true mucous membrane and is from two-thirds of an inch to one inch in length. It is surrounded by the external sphincter muscle which together with some fibres of the levator ani afford the necessary support. Without this means of support the anal orifice would be liable to frequent and severe injury incidental to the passage of large masses of hardened fecal matter, etc.

The rectum extends from its junction with the anal canal upward to a point opposite the third sacral vertebra, where the intestine becomes entirely surrounded by peritoneum and the lower end of the mesentery is attached. According to this classification the length of the rectum is: in men, about four to six inches; in women, three and a half to five inches.

The sigmoid flexure or pelvic colon extends from the third sacral vertebra upward to the lower end of the descending colon at the ex-

*Read before the Kentucky State Medical Association, Paducah October 16, 17, 18, 19, 1922.

ternal border of the left psoas muscle, and is about twenty inches in length.

Owing to the peculiar anatomic arrangements, certain pathologic lesions in the ano-rectal region persist and gradually extend, which, in other situations, would be readily healed. Such conditions, easily overlooked, are often reflexly the cause of more or less vague digestive disorders. The following case history is fairly representative of this type:

S. M., a female, aged thirty-five; date of first observation, January 17th, 1922. Family history negative for tuberculosis and cancer. Patient had typhoid fever when twenty-four years old. The following operations had been performed by other surgeons: Bilateral salpingo-oophorectomy, in 1911; tonsillectomy, in 1917; three rectal operations during the last two years. At the time of my observation the patient was somewhat emaciated, pale, and extremely nervous; she complained chiefly, however, of pain and soreness about the rectum.

According to the history, a rectal fissure was first noted about two years ago. There was an enlargement (abscess?) near the anus which was very painful for two or three days at a time, and recurred at intervals of three to six months. The use of suppositories always afforded relief.

In June, 1920, she was first operated upon for "rectal trouble" by another surgeon followed by comparative relief for about two months. During September, while swinging in a porch swing, the rope broke and she fell on the concrete floor. She said that she had suffered constant pain and soreness about the rectum since then. She was operated upon in November, and again in December, without any apparent improvement. Since the last operation she had complained of "bladder trouble"—burning pain—and stated that micturition gave no relief. She was extremely nervous; sleep restless; appetite good; alvine evacuations regular. She had lost about seven pounds in weight during the last few months, due presumably to pain and "nervous indigestion." Physical examination: diagnosis, submucous ano-rectal fistula.

Operation, January 18th, 1922: The anal sphincter was slightly divulsed which disclosed an eroded area just inside the anal verge in the posterior median line, under which a fistulous tract extended about one and a half inches to either side. Fistula and scar tissue carefully excised; anal spool inserted; usual gauze dressing applied.

The patient was very nervous and complained of severe pain the day after operation and morphine had to be administered to secure relief. The wound was dressed daily with hyperchlorite solution five per cent; anal spool removed in three days. Convalescence was uneventful and the patient was dismissed from the hospital, cured, February 6th, 1922.

Later report, September 10th, 1922: The patient states there has been no recurrence of rectal pain; that she has regained the weight lost and almost ten pounds additional. Her "nervous indigestion" and gaseous distension are entirely relieved and she says she is absolutely well.

Comment: In this case it is interesting to note that the so-called "nervous indigestion" was relieved by the removal of a sub-mucous fistula, which it would appear really constituted a local focus of infection. While it may not be entirely clear just how such rectal lesions produce digestive disturbances, the lesson to be emphasized is that in many instances cure of the rectal disease by surgical treatment has resulted in complete relief of digestive disorders of which the patient complained. It is not uncommon to have patients say, after the removal of hemorrhoids, excision of fistulous tracts, the cure of fissures, etc., that their digestion was markedly improved, and that they no longer suffered from constipation which had previously been a most annoying symptom.

It is probable that there are few if any individuals suffering from well defined hemorrhoids, particularly if bleeding, protruding or ulcerated, who do not also have distinct digestive disorders which are relievable by eradication of the rectal pathology. This point is well illustrated by the following case history:

B. L., a male, aged forty-eight years, came under observation February 22nd, 1922. The patient gave a history of the usual diseases of childhood, and had pneumonia in 1913. He came to me complaining chiefly of "painful piles" which prevented his standing, and he also stated that he was exceedingly nervous. He was fairly well developed but poorly nourished and had evidently lost considerable in weight. According to his statement he had suffered from hemorrhoids for four years; that he had pain on defecation which was more severe at certain times than others, and always aggravated when he was constipated. He was under the care of another physician two years ago, but the relief obtained from treatment was only temporary.

A few months before consulting me the symptoms had recurred in aggravated form; he complained of constant severe pain about the rectum when attempting to stand on his feet. He said he was constipated nearly all the time, and there was much abdominal gaseous distension. His appetite was good but

digestion was impaired, and care had to be exercised in the kinds of food ingested. Physical examination: diagnosis, internal hemorrhoids.

Operation, February 23rd, 1922. The anal sphincter was divulged and three large internal hemorrhoids immediately came into view. These were everted and removed by modified ligature operation; anal spool inserted and usual gauze dressing applied. The patient complained of no pain following the operation; anal spool was removed in three days. Convalescence was uneventful and the patient dismissed cured on March 5th, 1922.

Later report, September 9th, 1922: The patient stated that he has had no treatment since leaving the hospital and has had no further trouble; that he has gained nine pounds in weight, his constipation is entirely relieved, and his digestion is now practically normal. His general health and strength are much improved.

Comment: When this patient came to me his general health was considerably affected. Careful examination, both local and general disclosed no pathology except internal hemorrhoids. The treatment consisted simply and solely of removing the hemorrhoids. After the expiration of a few months he states that his constipation and digestive disturbances have entirely subsided. The inevitable inference is that eradication of the rectal disease cured the digestive disturbance. And that being true in this case, it is but natural to assume that rectal diseases may be at least indirectly responsible for digestive disorders in many other similar instances. It is a matter of common observation by rectologists that patients who complain only of rectal disease afterward state that the cure of their local trouble resulted in great improvement in their digestive powers. It is well known that not only hemorrhoids but other forms of rectal disease are quite common. It may not be quite so generally recognized, however, that in many instances the disturbances referable to the digestive tract are properly treated by eradication of the rectal lesion.

The importance of making rectal examinations has been frequently emphasized by the writer; in fact, he has often contended that rectal investigation should be made a part of every physical examination; in other words, that no routine physical examination should be considered complete until the ano-rectal region, the rectum proper, and the sigmoid flexure of the colon, have been thoroughly interrogated. It is surprising how much valuable diagnostic aid can be thus obtained and a correct conclusion frequently reached; whereas, without protoscopy, further groping in the dark would be the inevitable course. It is nearly always possible to determine the presence or absence of gross rectal disease by digital exploration, and this requires no special diagnostic ability. However, the differentiation of allied pathologic conditions, and the application of proper surgical or other treatment is not always so easy.

The fact is significant if not altogether surprising, that so distinguished and conservative an author as James P. Tuttle gives indigestion first place in listing the symptoms which suggest local examination of the rectum. The indications as given by him are:

(1) Indigestion, flatulence, loss of appe tite, irregularity in fecal evacuations, or constipation:

(2) Vague aching pains about the pelvis or sacral region which extend downward along the left leg:

(3) A sense of constriction or weight about the pelvis; this is especially important in males:

(4) Spasmodic or periodical dysuria without adequate cause in the genito-urinary apparatus:

(5) A tendency to diarrhea especially in the morning:

(6) The presence of mucus, pus, shreds or blood in the fecal discharges:

(7) Irregular menstruation or dysmenorrhea in young women:

(8) Restlessness at night, picking the nose, scratching the abdomen or anus, and vitiated appetite in young children.

Gant states that the symptoms, local and reflex, which suggest examination of the rectum are many and varied, the following being the most frequent manifestations of disease in that region:

(1) Pain,
(2) Protrusions,
(3) Hemorrhage,
(4) Constipation,
(5) Diarrhoea,
(6) Discharges,
(7) Itching,
(8) Tumors,
(9) Obstruction,
(10) Inflammation,
(11) Straining,
(12) Skin diseases,
(13) Altered feces,
(14) Cachexia,
(15) Auto-intoxication,
(16) Flatulence and tympanites,
(17) Abscesses and fistulæ,
(18) Fecal impaction,
(19) Dilatation of rectum, sigmoid flexure and colon,
(20) Indigestion,

(21) Change in temperature, pulse and respiration,
(22) Odor,
(23) Color of skin,
(24) Induration,
(25) Altered condition of sphincter muscles,
(26) Loss of weight.

In commenting upon indigestion, the author states that as the result of reflex irritation, impairment of intestinal digestion and defective assimilation are frequently symptoms of ulceration, stricture and carcinoma of the rectum; that sooner or later auto-intoxication manifests itself in cases of chronic constipation, chronic diarrhea, and other affections where the denuded intestinal mucosa permits pathogenic bacteria (especially colon bacilli) to enter the circulatory system. He adds that flatulence and tympanites are present in most chronic rectal disorders; the former is frequently a symptom of fissure and constipation, and particularly of intestinal indigestion; the latter of stricture and malignancy, becoming marked when perforation ensues.

Undoubtedly, many individuals suffer from constipation who are totally unaware of the fact, and when it has existed for a greater or lesser period, symptoms of indigestion appear, viz., flatulence, lack of appetite, coated tongue, abdominal distension, gaseous eructations, etc. The tongue is usually pale, flabby and furred; headache, drowsiness and mental lethargy gradually appear; sleep is interrupted by dreams, and the patient loses flesh and strength. Palpitation of the heart, dyspnea, vertigo and dizziness are sometimes noted; likewise there may be present visual disturbances, tinnitus aurium, cardialgia and various other reflex symptoms. It is a mistaken conception that constipation cannot exist even though the patient may have one or more fecal evacuations daily. Not infrequently one-third or one half of the feces that should be evacuated at a given time are retained until the next evacuation, or fecal impaction may occur in the colon, sigmoid or rectum and the patient be unaware of it because defecation is not entirely interrupted; the mass may become canalized, thus permitting the passage of liquid or semi-solid feces at intervals. Such instances are more common than ordinarily supposed.

In discussing the etiology of constipation, Kemp emphasizes the following: Voluntary abstentation from defecation because of pain which it produces by reason of rectal disease; increased contraction of the sphincter ani also occurs from irritation and interference with rectal function. The subjective symptoms of constipation may become quite severe. Among the milder manifestations are: sensation of fulness, tension and discomfort in the abdomen and sometimes the stomach; loss of appetite, belching, nausea, pyrosis, disagreeable taste in the mouth; coated tongue and headache; colicky pain and abdominal distension. Palpation may reveal considerable fecal accumulation especially in the colon. headache, dizziness, sleeplessness, despondency, palpitation, tachycardia, irregular pulse, etc., are due to auto-intoxication from the intestinal tract. Motor insufficiency favors stagnation and putrefactive changes. (Kemp).

Spasm of the sphincter muscles may ensue from irritation produced by various causes, such as hemorrhoids, fistulæ, fissures, polypi, ulcerations, strictures, carcinoma, etc., and because of the resulting pain the patient may delay defecation until there is more or less fecal impaction in the colon, sigmoid or rectum. The absorption of toxic material thus permitted produces auto-intoxication or toxic poisoning of intestinal origin, with its multitude of clinical manifestations. It is a matter of common observation that relief of the gastro-intestinal disturbances follows operative eradication of the rectal lesion.

The absorptive power of the rectum has been denied by some authors and affirmed by others. The writer agrees with those who believe that owing to their glandular apparatus both the rectum and sigmoid act as absorptive and secretive organs; the longer the fecal mass remains in them the drier it will become through absorption of its fluid contents by the Lieberkuhn follicles. Moreover, this absorptive function of the rectum is utilized by physicians in preventing or combatting shock after surgical operations and for stimulation or nourishment of patients when feeding by the stomach is impractical. Strange as it may appear, certain medicinal substances seem to enter the circulation more rapidly through this route than through the stomach; for example, cocaine, belladonna, hyoscyamus, opium, etc. Whether absorption is through the blood vessels, the epithelial cells, or the intercellular substance between individual cells, is uncertain. Some authors doubt the existence of the intercellular substance and believe absorption is through the epithelial cells. Cripp says that, "Possibly the nuclei of the columnar epithelium may be the means of taking nourishment into the body by escaping into the retiform tissue between the glands, and thus becoming lymphoid cells. According to this view, the columnar epithelial cells lining the rectal follicles have a far higher function than that generally assigned to them by physiologists, and instead of being employed in a simple secretion of mu-

cus, they are in reality the parents of leucocytes of the body." Tuttle, however, thinks it more probable that the absorbed fluid enters directly into the circulation.

It has been repeatedly shown that the colon secretes no digestive ferments, but that its power of absorption are very marked, therefore nutrient injections to be of greatest benefit must be predigested and fluid in character. Whenever functional rest to the upper alimentary canal becomes desirable, temporary abstinence from food by mouth is absolutely essential. Under such circumstances a sufficient amount of nourishment may be absorbed by the rectum and colon to sustain life for weeks or even months.

CONCLUSIONS

(1) That there exists an important relationship between rectal lesions and digestive disturbances has been shown by observation and experience:

(2) That while the exact nature of such relationship may not be entirely clear, the inference to be drawn therefrom are quite definite and of practical application:

(3) That it has been repeatedly demonstrated, following proper surgical eradication of rectal lesions, that the digestive disturbances of which the individual previously complained have promptly and completely subsided:

(4) That no routine physical examination should be considered complete which does not include careful interrogation of the anorectal structures to determine the presence or absence of disease in that region:

(5) That in many instances digestive disorders owe their origin purely to rectal lesions which are amenable to surgical treatment.

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Experimental Cancer Produced by Irritation.—Murray conducted experiments in which unaltered tar, alcoholic extract, and ethereal extract of tar were applied to separate areas of the dorsal skin of each of sixty normal mice. After four months, when the first tumor appeared, fifty mice survived, and of these twenty-five presented malignant new growths. Twenty-two animals bore carcinoma at the site painted with the ethereal extract; twelve had carcinoma at the site treated with the original tar, and two only had carcinoma at the site treated with the alcoholic extract. In one of these animals no tumors appeared at the sites treated with the apparently much more efficacious whole tar and ether extract.

HUNTINGTON'S CHOREA IN MONTGOMERY COUNTY.*

By SHERMAN SEE, Mt. Sterling

The object of this paper is to place on record some facts concerning the dissemination of Huntington's Chorea, which have come under my personal observation during a practice of almost twenty-five years.

A quarter of a century ago, when I had completed my medical course, I located in Montgomery County, Kentucky. I am a native of Powell County, which adjoins Montgomery on the south. In looking for a locality that needed a physician, I selected the southern edge of Montgomery County, because there were no resident physicians closer to that rural section than Mt. Sterling, the county seat, which was from six to sixteen miles from the territory I had selected for my future practice. I had no other thought when I located than to practice my profession and have a home in the county.

My practice has been uneventful, except that I have had a rare opportunity to watch in one section of my territory the gradual diffusion of the peculiar malady known as Huntington's Chorea.

There is a section of Montgomery County, close to the foothills, that has an undulating, sandy soil. It is noted for its inability to produce profitable crops, as the rich phosphatic limestone soil nearby is noted for its heavy production. There is as much difference in the character of the people who live in the Blue Grass section of the county and those in the foothill section, as there is difference in the character of the soils. As a rule, the farmers of the Blue Grass are progressive and prosperous, and have splendid homes with modern conveniences; while the people who occupy the leaner soil are unprogressive, ignorant, and live in rude houses or cabins.

At the present time there are about one hundred and fifty families of these unfortunate people living in the secluded section described. It has been my privilege to see the founding of most of these homes. The young people who were of marriageable age when I located here, are now the middle-aged or old people of the community, some of them having grandchildren as old as eight years. There are very few now living of the married people whom I found upon my arrival here. I have also seen a number of children whom as a young physician I delivered, grow to manhood and womanhood, marry, and themselves become parents. Many of these people have never consulted any physician but myself. I make these statements to show that I have had very unusual opportunities to study at first-hand the condition which I am

*Read before the Montgomery County Medical Society.

about to describe. I not only have had the usual intimacy of a country doctor with his patients, but also an intimacy which has been the result of their consulting me for almost a generation on many other lines than that of my professional duties.

Of the one hundred and fifty families mentioned, all have some taint of Huntington's Chorea. It has been transmitted directly from an afflicted man who came to this section about one hundred years ago. He was an eccentric, highly nervous pioneer, mildly affected with chorea. One son of his was affected to a considerable degree, and it was through this son that the disease has been so widely disseminated.

The afflicted son married into a family of rather low-grade feeble-mindedness. The interbred descendants of these two families now constitute the entire population of this isolated region. Every form of cousin and double-cousin marriages can be found among them. They marry very early in life and have large families, although, due to the primitive conditions under wheih they live, the infant death rate is high. They lack ambition, give no thought to education or their future welfare, but marry as the impulse and opportunity arise, and have as many children as natural law permits.

I have observed the choreic taint as it has been handed from the few families on to the many. The feeble in mind have not improved as the new generations have come. A large per cent. of the present generation could not earn a living in a more complex society, but would have to have institutional care. They can eke out an existence only in this, their native home.

The first families exhibiting the chorea did not give evidence of it until middle life or later. In 1911, however, I had some acute cases in boys and girls of ten and twelve years of age. These patients had violent paroxysms of involuntary muscular control. In all cases the patients were treated in their homes, and strong men came in to hold the children in bed during the most violent manifestations of muscular contortions.

Until the children had these attacks, I had given little thought to the danger of the nervous trouble. I was able by rather heroic measures to allay the outbreak temporarily. While the experience was fresh in my mind, I was visited by W. S. Anderson, who was interested in the hereditary basis of the disease, and have been in touch with him ever since then. He made me see its menace to the State, and, as a result, I have given closer attention to the malady.

In general it may be said that the chorea is confined to this community for two reasons. One is, the people afflicted do not go to other counties or states. They remain at home, marry some relative, and set up a new home in the old territory. The other reason is that there is no commingling of the young people of this region with those of the surrounding territory, because of the social and intellectual and, I may say, moral differences that exist between them.

The horrible result of this close intermarriage is the extension of Huntington's Chorea from the one ancestor until now every home is cursed by its baleful effects. The continued concentration of defective blood has resulted in a generation so feeble in mind that it is very difficult for them to maintain a meager existence, and at the same time petty crimes are on the increase among them. One dangerous manifestation of the general neurasthenia condition is the violent fits of temper that often lead to physical conflicts, some of which end in murder.

Perhaps I can best portray the ravages of the chorea by describing one family in which there now are three living generations. The grand father is a direct descendant of the original carrier of the malady, being his grandson. He is a man over fifty years of age, sound as to bodily appearance, and has worked as a farm-hand all his life under the urge of necessity. He has never had a severe attack of involuntary muscular movement, altho he seems not far from such a condition. He is of a peculiar disposition, however, and appears on the danger point of explosion all the time.

When one son was twelve and a daughter ten years of age, they broke down with a most violent attack of involuntary muscular contractions. They yielded after some weeks of treatment. The daughter has not had a return of a violent nature, but she has never been exactly normal. She is now the mother of a girl, born out of wedlock, and the infant already has given distinct evidences of chorea. The son married a choreic cousin when he was twenty-one years of age. A few weeks after his first child was born, he had a recurrence of the chorea, which for a time rendered him helpless. It was more like paralysis, with the right side of his mouth and tongue drawn. He could scarcely speak so as to be understood. He lay in bed for weeks with little or no control over his actions, altho at no time did he show any violent tendencies.

He has recovered so that he can be up and around the house. I warned him and his wife of the danger of more children, but no heed was given—and now there is a second child, conceived while the father was under treatment. The first child, not yet two years old, had an attack of chorea during the past

spring. This makes the fifth grandchild in the family of the grandfather described, and all have given distinct manifestations of chorea before reaching the age of three years.

It is this early manifestation of the disease, with its consequent unstable mental condition, that is alarming. Were these people in a city, almost all of them would be institutional cases. Sooner or later Kentucky will have to take notice and provide for the more unfortunate of them. The crime of it, which can be laid at the door of no one, is the freedom with which these people multiply and, by multiplying, intensify the curse of chorea.

FIBROMA OF NASO-PHARYNX*

By Samuel G. Dabney, Louisville

More than a year ago I reported before this society a case of fibroma of the naso-pharynx successfully treated with radium. The case is brought to my mind at this time by the fact that I recently received a letter from a physician in California stating that he was very much interested in my report, that it was the only case of the kind that he was able to find in the literature. He said further that he had a similar case which was being treated in the same way and asked me to send him a more detailed acount of my case which I did.

In November 1921, a boy of fifteen was brought to my office tottering and supported by his elder brother and his family physician from the eastern part of the state. I think he was the most exsanguinated subject I have ever seen. It is hardly too much to say that he looked "as white as a sheet." He was too weak to stand. He was laid on the sofa and the following history obtained:

The boy had gradually increasing nasal obstruction for some time and on account of that he had been seen by several physicians in an adjoining town and they had operated upon him with tremendous loss of blood. The doctors who operated upon him had written a very courteous letter expressing the opinion that probably the growth in the naso-pharynx was malignant, and regretting that they could do nothing more for the patient they sent him home with this statement, apologizing to the home physician for having to send back a patient whose case had thus far turned out so disastrously.

The history was perfectly typical of fibroid tumor of the naso-pharynx, the age, sex, pregressive nasal obstruction, and the tremendous bleeding. The patient was sent to the hospital for further observation, and I rather reproach myself that I excised a small piece of the tumor for microscopical examination. As I look back on the case I believe the clinical history should have been sufficient. However, a piece of the tumor the size of an almond was removed through the nasal cavity by means of a snare and was examined to confirm the diagnosis. This simple procedure again caused the boy to lose an alarming amount of blood. My opinion was that the case was inoperable so far as removal of the growth was concerned, and I so expressed myself to the brother and family physician.

It was suggested that perhaps something might be accomplished with radium and the physician said he would like to have Dr. D. Y. Keith apply it, which of course was entirely agreeable to me. I was present when Dr.Keith applied radium through the nose at eight o'clock in the morning. That afternoon about five o'clock I received a message from the hospital that the boy's temperature was 105 degrees F. I did not know much about radium and naturally became alarmed. However, I called Dr. Keith over the telephone and he said it was all right.

The improvement following the application of radium was little short of miraculous. Within two weeks the boy looked like an entirely different human being. He was breathing comfortably through his nose, he was on a generous diet, his blood had been replenished and he was regaining his strength. The boy went home but returned two or three times at intervals of a month or two. Improvement continued and I think we may safely assume that his relief has been complete as he has not returned since last April. He had a very large space in the posterior part of the nostril like we sometimes get after deep curettment of the ethmoids. There was one slightly suspicious nodule remaining, and as an extra precaution Dr. Keith gave him one more application of radium. Since then nothing has been heard from the boy but the last time I saw him he looked like a normal, healthy boy of fifteen. I wrote the California physician to this effect and asked Dr. Keith to give me a summary of the treatment which he did.

These cases are grave, and while of course one swallow does not make a summer, it is at least very suggestive, and the result secured in this case would seem to make radium worthy of further trial.

It is a little interesting that in the latest of our text books on the nose, throat and ear, by Dr. Dan MacKenzie, of London, he does not mention radium in the treatment of cases of this kind. He speaks very enthusiastically about diathermy, and says if operative measures are to be undertaken a preliminary laryngotomy should be performed on account

*Clinical report before the Louisville Medico-Chirurgical Society, February 23, 1923.

of the tremendous hemorrhage, that he regards these cases as very serious.

I thought it might be of some interest to make a final report of this case, and I think it may be considered final. The boy not having been heard from for nearly a year I think it is fair to assume that he is completely cured.

Pathologically nasopharyngeal fibroids are benign but clinicaly malignant; that is the way they are generally described. There is a strong tendency to recurrence unless completely removed, and the enormous hemorrhage constitutes the great danger in such cases. Fibroid tumors of the naso-pharynx usually occur about the age of puberty; they are seen most often in boys between the ages of ten and fifteen years; and often there is a tendency for spontaneous cure by the time the patient is twenty-one. It is certainly very unusual for the growth to first manifest itself after the age of twenty.

SOME ETIOLOGICAL FACTORS OF RETRO-BULBAR NEURITIS*

By C. T. Wolfe, Louisville

The optic nerve is composed of a million to a million and one-half nerve fibres and upon cross section it is seen that the papillo-macular bundle occupies one-third of the diameter. It is this particular part of the nerve that demands our attention this evening. Since the time of its discovery by Samelsohn, all ophthalmologists know its functions, clinical appearance at the temporal side of the optic nerve, its pathological manifestations and special liability to damaging influences. Its importance will be recognized further when we consider that the interior of the eye ball covers many square m. m. of surface and that about 1 m. m. of this surface (fovea) (macula) is supplied by one-third of all the fibres of the optic nerve one gets a perspective of the importance of this bundle.

An inflammation of the maculo-papillar bundle is called retro-bulbar neuritis. This subject is worthy of close study because of its relationship to diseases of general medicine and because of its relationship to pathological conditions of the nasal accessory sinuses. This relationship to the sinuses is quite intimate and indeed peculiar but have no positive information and we are in no position to state what intensity and duration of a sinus affection we must have in different individuals before their baneful influence makes an impression on the optic nerve. A review of the literature has led me to the conclusion that retro-bulbar neuritis is always an expression of some constitutional dyscrasia in which the optic nerves are only secondarly affected.

Of all the theories enunciated to prove the casual relationship between sinus disease and optic nerve disturbances, it appears to me that they are based almost entirely upon the relative anatomy in this region. While we are all more or less familiar with this anatomy, I feel it would be opportune to briefly discuss this in a few words. I shall, therefore, quote from Loeb and Odoni:

"First, the lateral and inferior walls of the orbit in the neighborhood of the accessory sinuses are, as a rule, very thin and are covered by periostium which is closely attached and which is frequently penetrated by numerous diploic veins which arise in the sinus walls and empty into the orbital veins. As the periosteal covering of the orbit passes into the optic canal it becomes so interwoven with the dural sheath of the nerve as to be microscopically inseparable from it. The walls of the optic canal frequently separate the nerve either from the sphenoidal sinus, the most posterior part of the ethmoidal cells, or from both.

"Second, in considering the involvement of the optic nerve in sinus disease, it is also well to bear in mind the circulation in both the orbit and the sinuses. The orbit in the main derives its supply from the ophthalmic artery, and its veins empty into the ophthalmic vein. The vascular portion of the vein is directly supplied and drained by the arteries and venae centrales retinae. The central artery and vein send off small branches which supply the avascular portion, the posterior central artery and vein. The intra-canalicular portion derives its supply from the small muscular branches of the ophthalmic artery, and is drained by the vein of Vessius, which empties into the cavernous sinus. This vein has numerous branches from the periostium of the posterior portion of the orbit and from the periostium lining and sphenoidal and posterior ethmoidal sinuses. The portion of the intra-canalicular nerve occupied by the papillo-macular fibres is elaborately supplied with capillaries; the more peripheral portion by small arteroids. Therefore, it is known that the blood and lymph circulations of the orbit and sinuses are intimately interwoven."

While it is very generally accepted that nasal sinus disease is the exciting cause in the vast proportion of cases of orbital inflammation, optic nerve involvement in sinus disease, however, is not dependent on orbital cellulitis, according to Bordley, nor are the pictures usually found in involvement of the

*Read before the Louisville Eye, Ear, Nose and Throat Society.

optic nerve in orbital cellulitis and accessory sinus disease analogous. Bordley also states that in the majority of instances the portion of the nerve originally involved is not that in the orbit, but that portion which is held within the confines of the right optic canal.

Those who have contributed most to our understanding of this subject are,—Fuchs, Vander Hoeve, Onodi, Loeb, Hirschfeld and Gradle. It appears that all agree on only one point: that the primary site of trouble is to be found in the intra-canalicular portion of the nerve. Some of them believe that edema of the optic nerve canal, with resulting venous stasis, is the basic cause; others point to the enlargement of the blind spot as evidence of mechanical pressure and consequent interference of function; still others believe that the direct transmission of toxins from the sinuses into and around the vein of Vossius and the capillaries supplying the central bundle is the exciting cause.

Gradle states "that pressure is one of the main factors in the production of retro-bulbar neuritis from sinus disease and claims that there are three types of pressure in the intra-canalicular portion of the nerve; pressure on the periphery of the nerve, which causes enlargement of the blind spot; a pressure involving the entire cross section of the nerve, causing complete blindness; pressure along the central vein of Vossius, causing para-central scotomas.

DeSchweinitz gives several of the sinuses credit for the production of individual symptoms and states that "the scotomas which Nettleship termed chiasmal amblyopia seem to be associated with disease of the sphenoid, rather than posterior ethmoiditis. The scotomas may be typically hemiopic as they often are in pituitary gland disease. Such scotomas may be produced by disease of the sphenoid, but not necessarily so. And if found it is not necessarily the sphenoid which is involved. Ring scotomas, sometimes of temporary duration, and not later assuming a different shape and sometimes gradually involving the whole area indicate an original involvement of the peripapillary bundle, and later of the central fibres. The paracentral scotoma may assume a crescentric shape and is not continuous with the blind spot. We may conclude that central and paracentral scotomas may, and often do, interpret sinus disease, especially of the ethmoid and sphenoid. He further adds that acute retro-bulbar neuritis may be an ocular manifestation of sinus disease and relief and cure are prompt if an early elimination of the sinus affection is possible and that chronic retro-bulbar neuritis may indicate the future onset of disseminated sclerosis."

In speaking of chronic retro-bulbar neuritis or toxic amblyopia, Collins and Mayou claim "that the poison possibly acts directly on the ganglion cells of the retina, or by the production of ischemia which interferes with their nutrition."

The poisons which may affect the sight are either endogenous or exogenous, endogenous being found in connection with diabetes, uremia, or the puerperal state; whilst the exogenous toxins are tobacco, methyl or ethyl alcohol and numerous other substances. The commonest poisons, of course, being tobacco and alcohol."

Adams claims that in looking over his notes of fifty-five cases of tobacco amblyopia, seven of them undoubtedly complicated by alcohol, concludes that a fully developed tobacco case is a full peripheral field with a central scotoma for red, extending from the blind spot to the fixation point, of definite oblong shape. When the scotoma is larger than this or assumes a circular form diabetes or other complications may be suspected. In this connection J. Strebel states that a change in the shape of the scotoma from oval to star shaped during the course of the disease must be looked upon as signifying a poor prognosis.

While all of the sinuses have and are occasionally responsible for retro-bulbar neuritis, cases of dental origin are extremely rare and in my search of the literature but one case was found which was reported from the St. Martin Clinic. This case was unusually interesting. There was no motor or pupillary disorder and the fundus, papilla and vessels were all absolutely normal. Visual acuity measured 9-10 right and the left eye 1-10. A central scotoma was observed relative to white, absolute to color. There seemed to be no pain except on pressure, when a sharp pain was felt in back of the eye ball. The only complaint was long-standing tooth ache. Sinuses negative; Wassermann negative. The author stated that improvement was observed 48 hours after extraction of the offending teeth and vision gradually returned to normal. The path of the infection from the tooth to the eyes was explained through the multiple anastomosis of the venous rete and peridental lymphatics with the facial and ophthalmic vessels.

Szymonowsky reported five cases of a peculiar form of chronic retro-bulbar neuritis, claiming that no analogous cases have been reported in the literature. The etiology of this disease and its relation to disease of the the central nervous system have not been explained. In all the cases the disease came on gradually. Usually the symptoms were bilateral. The visual defect was usually lo-

cated central, the periphery in most cases not involved. The ophthalmoscopic findings were positive in all cases, with the temporal half of the papillae pale and macula and fundus remaining intact. Etiologically the prevailing opinion was that there must be some toxic origin of this unusual time of the disease.

To briefly recapitulate for the purpose of study and convenience we may divide the subject into:

1. Retro-bulbar neuritis proper, subdivided into acute cases and sub-acute cases.
2. Hereditary optic atrophy or neuritis.
3. Toxic amblyopia.

In retro-bulbar neuritis proper the most frequent etiological factor is a neighboring diseased sinus. Though occasionally the neuritis is a local manifestation of a general disease, eg, gumma or a tuberculous deposit, and then the optic nerve may suffer as part of the rest of the central nervous system, eg., in insular sclerosis. The importance of acute retro-bulbar neuritis as an early sign of disseminated sclerosis has been pointed out by many authors.

Hereditary optic atrophy—The commonest form is that originally described by Leber. This type occurs almost exclusively in males, though frequently transmitted thru the females. The age of onset is usually a few years after puberty, viz., 18-23. The loss of vision is a central amblyopia, with a complete central scotoma. Habershon was inclined to attribute it to a family tendency, associated in some cases with excessive use of tobacco and sexual excesses. J. Herbert Fisher in a paper at the Congress of the Ophthalmological Society suggested that the lesion was caused by an inherited temporary disorder of the pituitary body which implicated the visual pathways. X-Ray pictures supported his theory.

Toxic Amblyopia or chronic retro-bulbar neuritis from the standpoint of etiology is naturally headed by tobacco and alcohol. As to how these poisons affect the nerve has already been explained.

While the subject of this paper and the time allotted would hardly justify us in taking up the symptomology of retro-bulbar neuritis, I hardly feel that it would be complete without at least mention being made of the common symptoms that are characteristic and pathognomonic.

In the early stages the ophthalmoscope may reveal only a normal fundus, but later the signs of a trophy may make their appearance. Due to the fact that the papilla-macular bundle is most often affected we find a reduction in central vision and therefore a central scotoma. Retinal metamorphosia is usually present and scotoma for blue develops before that for red or green. Enlargement of the blind spot is not a constant symptom. Deep seated pain in the orbit, headache and vertigo are symptoms usually found. Edema of the eye lids is frequently encountered, which is entirely non-inflammatory in origin and in this way is distinguished from the swelling occurring in orbital cellueitis. In multiple sclerosis we are apt to have an actual inflammatory reaction of the temporal side of the optic nerve, when in the other eye a simple exaggeration of the physiological pallor is seen. Another symptom which speaks for multiple sclerosis is sudden complete amaurosis lasting for days without any fundus findings or even nervous findings.

In conclusion I trust the Society will pardon me for confining my efforts to what may be termed a condensed review of the literature from an etiological standpoint, but time would not permit a discussion of the entire subject in detail. However, I have added a case report of unusual interest.

A. H., 48, A Clerk, consulted me February 2, 1921. History of excellent health excepting a catarrhal trouble, as he expressed it, of approximately six years' duration. First noticed a fogginess in vision about one month ago. This came on suddenly and was preceded for several days by pain about and behind the eyes, which was noticed especially upon arising in the morning with a tendency for it to subside or disappear entirely as the day went on. Vision 20-50 right and 20-30 left. Fundus examination of right eye showed a clear media with outlines of disc clear and surface markings normal.

The macular region and periphery appeared normal. In the left eye the only deviation from the normal was a paleness of temporal half of the disc. *Rhinoscopic* examination showed a fairly large polypus in right nares springing from middle turbinate with some evidence of blocking in upper nares by entire turbinal. Septum only slightly deflected low down and to the right with slight obstruction to breathing. Slight muco-purulent discharge which was increased by cocain-adrenalin and suction. The left nares showed very large middle turbinals, pus in small ananity in middle fossae. Patient claims that he had been blowing pus from both sides of his nose for several years, with tendency to develop "colds." His discomfort was always increased during winter months. Light passed thru frontals clearly by transillumination and thru both antri partially. However puncture and irrigation of both antri did not disclose sufficient trouble, in my opinion, to be playing a part in the acute eye symptoms. X-Ray report by Keith showed considerable clouding in anterior and posterior ethmoidal cells of

both sides with frontals, sphenoids and antri containing air. Blood Wassermann and Urinalysis negative. Lost sight of patient for two weeks, when upon his return, right disc showed marked neuritis but no swelling, with vision 10-200. The left disc showed outlines rather indistinct with beginning tortuosity of superior vessels. Vision 20-70. The patient was subjected to a thorough physical examination by Dr. Boggess, including urinalysis, which was negative. Examination of blood by Dr. John D. Allen showed there were 12,000 leucocytes, of which 76 per cent were polymorphonuclears, 18 per cent small lymphocytes. Operation advised and consented to, and I at once removed the right middle turbinale and exenterated the anterior and posterior ethmoid cells. The following day I did same operation on the following side. Within 36 hours the vision commenced to improve and when the patient was discharged 13 days later his vision was 20-25 right and 20-20 left. Fields taken this time herewith attached; notice will be made of the contraction of the color fields. The nerves were slightly pale and outlines a little blurred. The nose showed some crusts, but no pus.

Up until one week ago patient's vision had remained the same, when he noticed a slight fogging in right eye accompanied by slight pain behind eye ball. Vision 20-40 right, 20-20 left. Ophthalmoscopic and rhinological examinations were both negative. X-ray picture shows all sinuses except frontals negative with results of former operation satisfactory in that all ethmoid cells seem to have been removed. The frontal contains a mass which Dr. Keith thinks is calcareous in nature and which I believe to be responsible for the disorder in the eye. The fields show only a moderate contraction for the right. I intend operating the frontal sinus as soon as patient is convinced of the necessity and hope to report results at a later meeting.

Effect of Cessation of Irritant on Tar Cancer.—The experiments conducted by Leitch clearly show that when tar has been applied repeatedly for a certain length of time and the irritant is then removed, tumors, even carcinoma, may make their appearance at a later date. It must be that the irritation produces in the normal cells subjected to its influence some profound change, undetectable by the miroscope, so that they eventually proliferate in an unrestrained and in a harmful fashion. Leitch believes that it may be concluded that the neoplastic response to an irritant is a slow tissue reation that exhibits no defensive property and that sub-serves no useful function. The internal changes in the cells in the earliest stages are unknown.

TYPHOID FEVER.*

By W. F. Nichols, Munfordville

In the outset let me say that I do not class myself as an original investigator or even a close observer, therefore I have nothing really new to offer on the subject, and were it not for the fact that typhoid still stalks abroad in our land, and is yet one of the most formidable weapons used by the "Grim Reaper," this paper would find little excuse to exist.

Typhoid Fever as a disease may be traced back to Hippocrates and Galen. It was described by Spigelius in the seventeenth century, who pointed out the intestinal lesions. It is traced on through the writings of the eighteenth century, and in 1818 Bretonneau showed the relation of the lesions to the disease. Gerhard and Pennock of Philadelphia in 1837 and Jenner in 1849 established it as a separate disease, and in 1880 Eberth discovered the germ.

Thus by its cause and its character and the further fact that the germs do not tend to multiply to any great extent outside the human body, we are led to believe that typhoid has been an entity in the world since "Grandpa was a rang-o-tang, and Grandma was an ape."

Typhoid is found at all ages, in all climates and during all seasons. The greatest number of cases of typhoid occurs during the month of October from which there is a steady ebb to late in December when it is lowest, then comes a rise in the number which extends to March in which month we have almost as much as in October. From March till June there is another decline in number, then another rise to October again.

It has been found at as early an age as six months and at as late as ninety years. This so far as I am informed, gives the age limits of the disease, but the great mass of cases occurs during the active period of life, 80% of all cases occur between the ages of 15 and 35.

Its primary cause is the multiplication and spread of the bacillus of Eberth, a proteolytic organism which gains entrance by some means into the alimentary tract. As it fulfills all the conditions of Koch's law, namely—that first the germ may be found in the organism affected with the disease, second that germs taken from the diseased animal shall be cultivated artificially outside of the body, none of the original germs are left, third that these new germs be introduced into another healthy body which in turn becomes sick of the same disease, and fourth that the same germs be found in this new diseased body—its rela-

*Read before Hart County Medical Society.

tion to typhoid fever cannot reasonably be questioned.

It is an air growing motile bacillus about two microns long and half a micron wide, non-spore forming, and growing well on potato, agar, gelatin, milk bouillon, and blood serum. It is by nature a parasite and owes its presence in the soil and elsewhere to human discharges. It will survive in sterile water three months, in unsterile water three weeks. It will retain its vitality in running water for five days and travel as much as 85 miles but does not tend to multiply under such conditions. In privy vaults it will live five months and undergoes some multiplication under favorable conditions, but when the contents of such vaults are thrown out and spread on the ground, the germ disappears in two weeks.

As tyhpoid is principally a water borne disease we can readily understand some of its methods of spreading. Chicago situated as it is on a large body of fresh and comparatively pure water from which it receives its water supply is constantly menaced by such apparent harmless causes as excursion boats, bathers, campers, surface drainage following heavy rains and the small streams flowing into the lake; and were it not for the devitalizing effect of sunlight and pure air upon the germ and the fact that the city obtains its water supply from the large water cribs far out in the lake, we might expect a continual epidemic of typhoid in the city. Something over a quarter of a century ago when the Chicago River flowed into the lake such was the case; but upon the advice and direction of the City Board of Health the Board of Aldermen appropriated $30,000,000 and constructed the famous drainage canal from the Chicago River across the state to the Illinois river thus causing Chicago River instead of flowing into the lake to flow out of it carrying with it the sewage of the city. This is carried by the Illinois River across the state into the Mississippi above the city of St. Louis. By this means Chicago practically rid herself of typhoid fever, but she brought down upon her the wrath of St. Louis, and the most voluminous law-suit that ever burdened a court. This suit which was brought before the Supreme Court of the United States and included over 20,000 typewritten pages of evidence, pleadings and exhibits etc., was finally dismissed on the grounds that St. Louis had failed to make a case, the evidence going to show that the organisms were all destroyed during their transit across the state, and further that the water below the mouth of the Illinois River was more nearly pure than that above it.

The city of Hamburg, Germany, which gets its water supply from the River Elbe, in the four years of 1885-1888 had 15,804 cases of typhoid fever, while now under proper filtration the number is reduced to zero. Plymouth, Penn., gets its water supply from two sources, the Susquehanna River and a reservoir fed by mountain streams. In 1885 an epidemic of typhoid fever broke out and at one time was increasing at the rate of 100 new cases a day. Investigation revealed the fact that a typhoid family living on the banks of one of the mountain streams feeding the reservoir were throwing their alvine discharges into a privy vault during the day, but were throwing them into the stream at night. The cause having been discovered the epidemic was quickly subdued.

While the water supply is most generally the source of infection, sometimes a real epidemic can be traced to the milk supply. We read of several instances where dairymen using the water from contaminated wells and springs for washing and cooling their milk vessels, have spread the disease along their routes. The few bacilli left in the cans after rinsing them with the water coming in contact with the warm milk at once began to multiply and were delivered in an active state to their customers. Such epidemics have occurred in several of our American cities.

The city of Strassburg during a two year period traced the sources of typhoid as follows: Milk supply, 26.7%; contact, 16.8%; water, 14.6%; imported, 13%; carriers, 9.5%; food, 2%; other sources, 15%.

Gardeners sprinkling green vegetables with contaminated water have often spread the disease among their customers. Flies are a prolific source of infection and its spread where there is typhoid in the community, by carrying the germs from contaminated excreta to the food on our tables and even our dishes and drinking vessels. The germs may live for 23 days on the foot of a fly.

Food handlers who are carriers and not overly careful of themselves may scatter typhoid. The germs will live in several of the staple foodstuffs for varying lengths of time. While the freezing of ice destroys most of the germs at the time, some retain their vitality for as much as a month and a very few may survive six months. The same danger may hold good for ice cream as for ice. They will live in butter for three weeks and become a source of infection. Oyster beds may be contaminated by inflowing creeks and become a prolific source of danger when eaten raw. The germ may live in beer for three days and even in dust for five hours.

A source of infection from which it is next to impossible to protect ourselves or the pub-

lic is in the typhoid carriers. These are persons, 80% of whom are women, who have had typhoid or have been intimately associated with it and continue to carry the germs for a longer or shorter period after the symptoms of the disease have all cleared up. The source of these germs is in most cases the gall bladder and are excreted from the bowel, but a few cases of carriers excrete the germs through the urinary system. Six per cent of all persons having typhoid fever become carriers one third of whom clear up within a few months but two thirds of whom continue as carriers for twenty or thirty years. We read of a Swiss woman who was a carrier for thirty-one years and during the period infected her husband, her son, her daughter-in-law, and eight servants, eleven persons in all. "Typhoid Mary" was reported by Dr. Soper in the Journal of the A. M. A. in 1907. She was a servant girl and in her contact with seven families infected each in turn, twenty-eight persons in all. As healthy carriers do not give the Widal reaction it is extremely hard to find them until they have infected enough persons to create a suspicion of their being the cause. The number of cases given in several different epidemics as being infected by carriers is given as ranging from 4% to 32%.

Another source of infection is in the unrecognized cases of typhoid. Koch found in his studies at Treves that there were nine unrecognized cases of typhoid to one that was recognized. If his deductions were correct and the same rule holds for the rest of the world, the wonder is that anybody escapes. The lesson here implied is never to pass any possible case of typhoid until proved something else. I feel sure that I am not the only one who has let many a case of typhoid slip through his hands with some such obscure diagnosis as "bilious fever" and a dose of calomel. I got my lesson well driven home last winter when I ran into a small epidemic of typhoid in the families of two brothers near Rowletts, Ky. First there were four cases in the first family with one death, then I was called to the second family and found what I diagnosed as Influenza (and I still think my diagnosis was correct at the time). They had the typical chest symptoms, pains, cough, early high fever, and two of them rapidly passed into a peculiar type of pneumonia, very much like the "massive broncho" type described in the army and both of them died within two days of each other, the bloody mucus exuding from the mouth of each even after death. They had each rapidly passed into a delirum with the driest mouths and tongues I think I ever saw, and even had the low muttering delirum before death. The first was the mother of the family about 40 or 45 years old and the second was her sixteen year old daughter. The cases had such a typhoid look that I had sent blood specimens for the Widal from all the cases then sick and got negatives from them, but later we got positives from those still living. In each of the first cases the pulse became rapid very early in the course of the disease, as high as 150 or more, and became very weak and kept going by heavy doses of camphorated oil hypodermically. I had called a consultant on two or three occasions before any of the deaths occurred and the morning of the second death I had three able diagnosticians with me. We made a clinical diagnosis of typhoid fever regardless of previous laboratory reports; but all were of the opinion that I had been dealing with a double infection. In all I had nine cases in these two families out which four died. In all of the cases in these two families except the first which was a two year old child the infection was evidently by direct contact, likely from drinking and eating together.

This first case of the two year old child, after a very irregular course of three or four weeks and the fever had subsided, passed into a state resembling infantile paralysis. A very grave prognosis was given, but the little fellow gradually improved for several months and is now apparently perfectly well with no hint of paralysis. The second case of this first family was a moron about fifteen years old and had been sick a month when I saw her. She was then in the typhoid state but as she was accustomed to lie and not talk it was not noted just how sick she was. She had a typical typhoid and died within a week of my first visit to her. Two other children of this family had mild but protracted cases of typhoid but finally got well. One peculiar feature of one of these two cases was in a little girl about eleven years old who developed a pretty severe neuritis like affection involving the limbs principally, but this finally cleared up. In these two families I think I encountered every complication incident to typhoid except perforation.

In the body the typhoid bacilli are found in the blood, feces and urine of patients, and as a result of blood distribution, in the spleen, lymph glands, bone marrow, gall bladder and the rose spots on the abdomen. It would appear that the disease is a general infection with a local expression in the lymph tissue, most especially of the Pyer's patches and solitary glands of the intestines and the mesenteric glands. Upon its ingestion into the human body its multiplication begins, and within three days after a massive dose the symptoms have been known to appear. The

average incubation period is given in civil life as about 14 days but in military life the average seems to be ten and a half days. It may be as late as forty days in developing the symptoms. Perhaps much depends on the size of the dose of the infection, the multiplication of germs going on rapidly from the first ingestion till they are so numerous that the proteolitic process assumes proportions large enough to set up the symptoms.

The lymphoid tissue of the bowels especially of the lower part of the small bowel is the part principally involved, the Pyers patches, which are situated in the small bowel in a line opposite the attachment of the mesentery are the primary seat of the disease. Together with the solitary glands, they undergo degenerative changes which may be divided into four stages:

1. Infiltration lasting about a week or ten days;
2. Resolution or, if resolution does not take place, necrosis which runs from about the tenth to the seventeenth day;
3. Ulceration follows necrosis from about the seventeenth to the twenty-first day in which there is sloughing off of the necrosed areas leaving the ulcers;
4. Cicatrization or healing of these ulcers from the twenty second to the thirty-sixth day.

During this same period the mesenteric glands are undergoing changes similar to the Pyer's patches except they seldom necrose but usually terminate by resolution. Also certain of the other lymph nodes of the body undergo this infiltration and resolution. The spleen becomes enlarged by the end of the second week and gets to two or three times its normal size, and I have seen this condition last for several months giving a good deal of trouble at times.

At autopsy in typhoid cases degenerative changes resembling fatty degeneration are found in the muscles especially the heart muscle. Ulcerations in different stages of development are found principally in the lower nine feet of the small intestine, but they may develop in any part of the alimentary tract, even in the pharynx, larynx, appendix, caecum, Meckle's diverticulum, gall bladder or urinary passages. A general catarrhal condition exists in the stomach and bowels. Something of an index to the condition of the alimentary tract may be had from the condition of the mouth.

Upon an early diagnosis depends our treatment and consequently our prognosis. The premonitory symptoms are usually passed before the physician is called and the case may be well into attack proper. There may be a general ill feeling with headache, loss of appetite, some pains in the abdomen and limbs, some cough, dulled hearing, coated tongue and some fever.

This may run for nearly a week, the symptoms gradually deepening and yet the patient may think there is not much the matter with him, taking some sort of patent liver pills and often feeling better for a time.

Finally when he gives up and calls the doctor he is likely well into his second week and may be into the third. We find with a varying fever ranging from 102 to 105, comparatively slow pulse, tongue coated but having flannel red edges, gas in the bowels with some diarrhoea, comparatively slow pulse, some epistaxis, tenderness and gurgling in left iliac fossa elicited by deep pressure and diagnose typhoid fever.

Many patients fearing a diagnosis of typhoid and not wanting to hear it, are prone to unintentionally mislead the doctor. It is better to make a diagnosis of typhoid and miss it than to miss it by not making the diagnosis. We had better start prophylactic measures when not needed than to leave them off when they are needed.

Typhoid has been more often confused with the late summer type of malaria than any other single disease. One doctor, who generously relieved me of a severe case in mid winter, made such an error and put the patient on "Vinitone." Since malaria has become almost a stranger in this climate however, we need not spend much time with "Vinitone." I am now convinced that more cases of typhoid have been passed up as malaria than cases of malaria have been diagnosed as typhoid.

I find certain obscure types of focal infections more confusing than most anything else, especially of the bile passages; but the error will soon become manifest to a close observer and we can always have access to the Widal to clear it up. Usually the comparative pulse rate will prove sufficient even if we have to resort to the atropin test.

Influenza has fooled me for a visit or two, but the pulse rate again usually comes to the rescue. Acute miliary tuberculosis, which is but one kind of focal infections, often runs a typhoid course and becomes a misleading factor. Typhoid fever perhaps more closely resembles typhus than anything else, but as typhus is almost an unknown disease in this climate and this far from the sea, we do not usually lose any time with considering it.

In the west, especially along the large irrigation mains, where people use the water from the ditches for domestic purposes, is found what is known as Mountain Fever. This I believe is a mild type of typhoid, the

virulence of the germs being impaired by the ice-cold ditch water.

Acute endocarditis and tertiary syphilis may also be mentioned in this connection as also becoming misleading, but any degree of care will soon dispel any doubt.

Within five or six days from the outset we can get a positive Widal and by the end of the first week the germ is passing through the bowel, but disappears from the stools by the end of the fourth week, except in the case of "carriers." Twenty five per cent of the cases show urinary infection, sometimes as much as 100 million or even 500 million to the cc. This appears late in the course of the disease or even after the other symptoms have subsided. As the germs multiply rapidly in the alkaline bile passages, the gall bladder becomes the most probable source of infection in the case of carriers.

The treatment of the attack consists essentially in proper nursing and environment, with due regard to feeding, than to any course of medication ever yet devised. We yet give the vaccines or sero-bacterins in therapeutic doses, but unless we get a very early start the reaction from the infection itself comes in, if it comes in at all, before we can produce it artificially, and I seriously question the efficacy of any kind of vaccines after the onset. The patient should have the quietest, coolest, best ventilated and most convenient room the house affords, and as far from the kitchen and dining room as possible. A good nurse should be early put on the job, not necessarily a trained or graduate nurse. I prefer a willing, intelligent person without training to one who is lazy or cross or egotistical enough to try to supplant the doctor. The doctor can train any intelligent, reasonable person with a fair education more easily than he can subdue an egotistic shrew who already has the training. Now I shall abbreviate the treatment saying to use baths as nearly approaching the Brand system as possible except that I do not use water so cold as the Brand system directs. Never use the coal tars. The fever is one of nature's means of combatting the disease and should not be materially disturbed unless it becomes consuming. Antiseptics internally do but little good. It is like a child with a flower sprinkler trying to extinguish a burning building.

Hexamethyline keeps the urinary tract more or less sterile only while the urine is acid. Turpentine assists in keeping down the meteorism. The bowels should be kept open with mineral oils or even castor oil as necessary. The rest of our medical procedure will consist in meeting the symptoms as become strictly necessary. The feeding should be liberal. Liberal fed patients show less tympany, fewer hemorrhages, fewer perforations, greater strength but a greater number of relapses than the milk fed. The liberal feeding consists in furnishing the body with 3,000 calories daily of food, more than half of which should come from carbohydrates, mostly milk sugar. A suggestive course of diet may be outlined as follows:

Breakfast at 6 a. m., ½ ounce of oatmeal with 4 ounces of 20% cream and sweetened with milk sugar; one slice of buttered toast and one soft boiled egg.

Mid-morning lunch about 9 a. m., one glass of egg-nog or egg custard.

Dinner at 12 noon, 1 soft egg, 1 glass of milk with 4 ounces of cream, 1 glass lemonade sweetened with milk sugar, 1 slice of buttered toast and 4 ounces of ice cream.

Afternoon lunch at 3 p. m., a glass of egg custard or egg-nog again.

Supper at 6 p. m., 1 soft egg, one glass of milk with cream, 1 glass of lemonade sweetened with milk sugar.

Midnight a glass of milk or egg-nog. Any deviation and variations may and should be made in the above outline, but due regard should be had to the proper distribution of the carbohydrates and fats and proteids.

About 1700 calories should be furnished by the carbohydrates, something like 1000 by the fats and the remainder by the protieds. The carbohydrates are best furnished by milk sugar if agreeable but where this is not well taken, it may be furnished by the other sugars and some starches, even candy may be permitted especially in finicky children. In our instruction to nurses care must be exercised in magnifying the dangers of careless disposition of the excreta and the management of flies. After the fever has pretty well declined, if the patient is becoming restive, he should be allowed to sit up in bed and as soon as he is able to do so he may be allowed to sit up in a chair awhile each day gradually resuming his accustomed habits about the house.

A comparative study of the effects of the liberal diet as compared with the milk diet was made by Dr. Coleman in 444 cases of typhoid in Bellview Hospital showing a preponderance of evidence in favor of the liberal over the milk diet. A brief tabulation is here given.

Mortality in the milk fed was 17.6%, while in the Liberal fed it was 8.1%.

Perforations in the milk fed was 3.15%, while in the Liberal fed it was .9%.

Hemorrhage in the milk fed was 14.4%, while in the Liberal fed it was 9.45%.

Tympany in the milk fed was 31.5%, while in the Liberal fed it was 17.6%.

Diarrhea in the milk fed was 48.6%, while in the Liberal fed it was 16.2%.

Also the delirium and stupor were much lessened, the only symptom showing an increase under the liberal feeding was the number of relapses showing an increase of 3.1%.

The causes of death in typhoid are given as follows:

Intense toxemia, 50%; perforation, 15%; hemorrhage, 10%; lung involvement, 10%; renal complications, 4%; several other causes and complications, 11%.

The danger signals are (1) rapid, weak pulse, a pulse rate of over 120 should create anxiety, while a rate of 150 creates alarm. In one report, eleven out of twelve died after the rate reached 150. (2) Early severe nervous manifestations, such as delirium, tremor, carphologia, etc. (3) Intractable hiccough, incontinence or retention of urine, extreme tympany are all alarming symptoms.

The complications of typhoid are legion and each should receive its own special treatment. Bed sores should be expected only to be prevented. Abscesses sometimes become quite troublesome. I had a patient a few months ago who must have had two or three dozen of them. I treated them as I would ordinarily treat one. Abortion always happens to the pregnant woman if she has anything like a hard attack. Peritonitis follows perforation and death follows peritonitis. Suppuration of the temporal bone and subsequent meningitis sometimes occurs. Confusional insanity, slow speech, aphasia, epileptic convulsions, corneal ulcers, paralysis, parotitis, hematemesis, hepatic abscess, either with or without jaundice, venous thrombosis especially of the left iliac vein, pneumonia and once in a while a constriction of the oespohagus from healed ulcers are all among the complications and sequelae of typhoid fever.

The duration of the disease varies from a week or two in the abortive type to three or four weeks in uncomplicated cases and when a case is extended more than four weeks look for the cause. In complicated cases the patient may suffer three months or even more.

Death may occur in two or three days in the malignant form, more often in five or six days, but later in the disease. The greatest number of deaths occurring in the third week from the actual onset.

The prognosis of typhoid is always more or less grave. Aside the considerable death rate, and the number of permanently disabled, the long period of illness with its contingent great expense, the long and wrecking anxiety of family and friends, and the final decrepit or crippled condition of the patient if he gets over the attack, all combine to make the word "Typhoid" a synonym of dire calamity. Furthermore, typhoid in the armies of the world has caused more deaths than shot, shell and gas. However, the present use of vaccines and other prophylactic measures has reduced this death rate almost to nil.

In the French army in 1875-1880 the death rate was 350 to the 100,000 men.

In the Armerican army in 1909 the death rate was 28 per 100,000, but by 1913 this had been reduced to zero. In the Civil War there were 75,000 cases of typhoid with 27,000 deaths. In the Turko-Russian war in 1877 there were 7800 deaths of typhoid and only 5000 in battle. In the Spanish-American War there were in the American army 20,738 cases of typhoid fever and 1580 deaths, while the losses in battle were only 243 men.

In civil life the cities of the Old World have made much greater progress in stamping out this dire malady than American cities have, but in army life America seems to be in the lead. From such statistics as the following we are sometimes led to wonder if American citizens do not sometimes have more liberties than are good for them. We will compare statistics from ten of the large cities of Europe with ten from America during the same period:

Death Rate per 100,000 of population in 1909 and 1910.

Ten cities of Europe:

Stockholm	3.2
Christiana	1.6
Vienna	3.3
Edinburg	.75
Hamburg	3.7
Berlin	3.5
London	2.7
Paris	7
Frankfort	1.2
Antwerp	1.7

Average rate for these ten cities was 2.86 per 100,000 population.

Ten cities of America:

Chicago	13.2
Washington	28.7
New Orleans	29.9
Minneapolis	39.8
St. Louis	15.6
New York	11.8
Philadelphia	19.9
Boston	12.6
Kansas City, Mo.	41.8
Los Angeles	15.6

Average for these ten American cities was 23.1 per 100,000 population.

But by 1918 this had been reduced to 7.6 per 100,000.

In the United States we annually endure 250,000 cases of typhoid fever with 25,000 deaths. To say nothing of the suffering, sorrows and heartaches, our actual economic loss it would annually reach the princely sum of $137,500,000 from this disease alone; and yet there are those who cry out in horror at the mere mention of a department of Public Health sufficiently financed and policed to carry out some of the simple hygienic measures necessary to stamp out most of this terrific drain.

TRACHOMA*

By G. W. Payne, Bardwell

Trachoma is either acute or chronic. In the acute form the lids are swollen, the conjuctiva red, and the papillae hypertrophied, and between them are found the non-vascular roundish granulations. The dread of light is intense, and on opening the lids scalding tears run out. The whole conjunctiva is as a rule injected, superficial vascularity of the cornea arises, and ulceration especially of its margin may appear. Pain in the eye brow and temple is a prominent symptom. In the beginning the discharge is scant, but later a muco-purulent stage begins, succeeded by purulent discharge.

The process terminates either favorably by the absorption of the granulations or runs into the chronic form.

The chronic form often appears so insidiously that the patient does not know that there is any thing the matter until the case is well developed. The granulations develop upon the lids in the form of grayish white semi-transparent bodies, which vary in size according to the stage of development, and which have been called sago-grain or vascular granulations. They may be scattered or arranged in rows and have been likened unto frog spawn. The granulations are for the most part confined to the palpebral conjunctiva, (and especially the upper retro-tarsal fold.)

The mucous membrane is pale or yellowish red, uneven, rough and contains the trachoma bodies, which have a more or less deep situation and fill up the tissue. There are very few manifestations and very little discharge, only enough to glue the lids together. As the case progresses the closely packed masses compress the conjunctivial tissue and its circulation, and a superficial vascularity of the cornea may appear.

In the next stage the vascularity is increased, the follicles grow larger, soften, and their contents are forced out by the pressure of the surrounding infiltrations, forming in association with the hypertrophied conjunctival papillae, red protuberances. In this period we have strong irritations and muco-purulent or purulent secretion, photophobia and pain.

There is a disease called folliculosis that has been confounded with trachoma and has been diagnosed and treated for trachoma many many times. The points of similarity are that both are inflammations of the conjunctiva characterized by the presence of small accumulations of lymphoid tissue which constitutes the granulations or follicles. They differ in that folliculosis is a mild, self limited, non-contagious disease, probably the reaction of one of a number of irritants, not attended by subjective symptoms and disappears, leaving no trace, while trachoma is a serious chronic, sight destroying, contagious disease attended with many symptoms, and which heals by the conversion of the granulations and hypertrophic conjunctiva into cicatricial tissue, leaving scars and sequellae.

Folliculosis is a disease of childhood. Trachoma is much more common in adults. Folliculosis has a predilection for lower lids, while trachoma may involve both lids and especially the upper lids. In folliculosis, the conditions is discovered accidentally as there are no symptoms as a rule. While in trachoma the patient complains of sensitiveness to light, lachrymation, pain, disturbed vision, and sticking together of the lids, there is photophobia and often a drooping of the upper lids and secretions is usually marked.

Treatment

Cleanliness is one of the most important things to be remembered by the patient and doctor in the treatment of trachoma. The eyes should be flushed frequently with a mild antiseptic solution. The object in view is to reduce inflammation and hypertrophy.

When the secretion is abundant use ½ to 1 per cent solution silver nitrate and Boracic Acid solution. After the inflammation subsides caustics such as cupric sulphate applied three or four times a week, care being taken not to touch the cornea.

The surgical method is carried out by expressing the granules with roller forceps or by pressing the conjunctival surface of the lids together between the thumb nails, or by rubbing lids with gauze or excision.

The treatment of folliculosis is simple. Plenty fresh air and sunshine with the following prescription, sulphate zinc grams 1, Aqua 1 oz. Ointment yellow oxide mercury in rebellious cases applied on borders of lids is also useful.

*Read before the Carlisle County Medical Society.

AN INDICTMENT AGAINST THE CLARK COUNTY MEDICAL SOCIETY.*

By S. J. Rose, Winchester

Every one else has taken a pot shot at the Clark County Medical Society and its members so why shouldn't I? A few weeks ago we were told by some of our visiting colleagues that our countenances shone like sun beams around the banquet table but that they had heard before reaching Winchester that everything was not as pleasant as it looked.

It is not my object to deal with how we should or should not treat our fellow practitioner but how we are actually treating or rather mistreating ourselves as well as our patients. I have in mind the mismanagement of our chronic cases. We all know that the amount of real work on acute diseases is somewhat limited and that the nursing plays by far the most important part. I sometimes wonder why we general practitioners do not have our sign printed to tell the real facts about ourselves and which would read about as follows: "John Doe, M. D., treats all acute diseases, attends to confinement cases, sets broken bones and opens boils. He would treat chronic cases too but they are tired of his pills and have all gone to the mechanical doctors."

Gentlemen, there is not a physician in Winchester who has not contributed at least ten of his chronic patients to a man that has never seen a medical college, a man who, obviously, is less capable of treating any type of disease than any of us and the solution is with ourselves. Since our course in the fundamentals of the practice of medicine is the best that can be had there is no reason why we cannot give any treatment that may be indicated mechanical or otherwise. This will serve two purposes; to be able to assure the patient that nothing that is beneficial will be left out in his case and at the same time save him from the unscrupulousness of the short cut doctor who has only the victim's pocket book in mind.

Only a short time ago a Frank Brown, whom Doctor Lyon had treated and in whom I found a very far advanced mitral regurgitation, came to my office. He informed me that he had been in bad health for years and that all the physicians had failed to help him but that at last he had found one who was curing rapidly. Brown was told that it would take about one hundred treatments to effect a cure which meant one hundred days at a dollar each. The so called doctor was aware that any number of things could happen in one hundred days, therefore an alibi would be a very easy thing established. If Brown needed mechanical treatments, which we all know he did not, why not get them from his own physician, who at the same time may be able to prescribe for him? Instead of this he was informed that he must discontinue all internal medicines so that he would know where to give credit for the cure that was sure to come.

An old man living in Owsley County, whom I have known to be almost totally blind from senile cataract for the past fifteen or twenty years, was promised to have his eyesight restored if he would take about one hundred treatments. This old man needs all he has but still he manages to get the necessary amount of money together and turn it over to the miracle man. The trick, apparently, is to be somewhat conservative in promises made to the victims living near home but no limit to the ones living at a distance.

I had a man living here in Winchester, seemingly, with more than ordinary intelligence to tell me that a friend of his had just been cured with a hernia the size of two quart cups and which was reducible at times only. You know where that information came from. The so-called doctor made this man's back feel better and he in turn easily believed any stories of miraculous cures to be gospel truth. Any one who has seen one of these treatments given could, I feel sure, explain to his patient in a very forceful way why he or she should not have them administered in such conditions as floating kidney, pregnancy, tubercular lesions in the thorax, abdomen or spinal column, carcinoma or sarcoma in the same location as the last named disease, certain forms of appendicitis, certain gall bladder conditions and many more that I cannot at this moment recall.

Of course, we do not have to answer for the fraud that is being practiced in so many words but in reality we are the cause of its existence. Just as long as we persist in filling our chronic patients with pills and nothing more, we can expect to continue to drive them away from us and every one of you know where their next stop will be. No doubt each of you could relate the story of many such cases as the three above mentioned but since nothing is to be gained by an endless number of citations, the remedy should be discussed.

In my opinion, there is only one remedy; stop knocking the method and learn enough about the manner of giving these treatments to at least explain intelligently why a patient should or should not have them. If in your opinion they will help him by giving them in conjunction with other remedies, do so.

*Read before the Clark County Medical Society February 16, 1923.

The treatments make one feel better temporarily and only cost a dollar. Those are the two points that the patient has in mind at all times. He feels that even though they do not entirely cure him, they make him feel better and do not cost much.

A man will buy a whiskey prescription paying from $2.00 to $3.00 for it and $3.50 for the bottle, making a total of $5.00 or $6.00 when he knows and the physician who issues it to him also knows that he will only feel better while he is drinking it and worse afterwards, but nothing is thought of that, so why should we not also be able to give our chronic patient something to make him feel better in the way of mechanical treatments, especially when he demands it and will even travel for miles, paying his travel and living expense as well as for the treatments? If he does not need them who should be better able to judge than ourselves?

I hope the time may soon come when all of us may discard our ostrich-like attitude toward all creeds and cults, select any parts or points that are worth while and use them when and where indicated.

EMBOLIC GANGRENE OF THE FOREARM AND HAND.*

By J. Garland Sherrill, Louisville

Within recent years surgery of the arterial system has received more attention than formerly. The first impetus was given by the studies in arterial suture of Murphy, Crile, Carrel, Matas and others. More recently Bernheim has called attention to the methods of conservation of the extremities in threatened gangrene in the limbs from senile changes, also in diabetes. The changes occurring in the vessels in old age and in diabetics also are well known and result as a rule in gradual diminution of the blood supply, usually giving warning by pallor, coldness followed by superficial mottling, relieved temporarily by elevation and dry heat. As the ischemia progresses, tingling, burning pain, lividity, coldness, finally loss of sensation and gangrene develop. In these cases at times, particularly where the cardiac action is failing, a condition not infrequent in cases of cardio-renal disease, one meets the sudden development of the embolic type of gangrene. In this type of gangrene the onset is usually sudden, accompanied by very severe pain due largely in my opinion to the sudden ischemia of the tissues particularly of the nerves. Numbness, coldness and lividity rapidly supervene and the gangrenous process develops promptly. In some cases where the embolus is small or located so that the entire circulation is not cut off, the sudden pain is followed by a partial discoloration proceeding slowly to a termination in gangrene. The development in such cases proceeds by the extension of the clot both in a distal and proximal direction.

I have met a number of cases of embolism in the lower extremities, and in one instance emboli were sumultaneously implanted at the division of each popliteal, which is the point of location usual in these cases in the leg. I had never, so far as I can recall, observed embolism of the brachial artery with resulting gangrene of the forearm until Sept. 11, 1922, when I was called with Dr. M. Collins to see Mr. W., age 48. The following history was obtained:

Some time in February of this year, he began to feel ill, complaining of dyspnoea, indigestion, anorexia, and loss of weight amounting to twenty-eight pounds from normal by July. His attendant during his illness in the spring found his urine to contain sugar as well as some albumin and casts. He was accordingly placed on the usual dietetic and general treatment for diabetes. During the absence of his attendant he came under the observation of Dr. M. Collins who found the patient with exaggerated dyspnoea, rapid shallow respiration, soft thin irregular pulse, some oedema of the legs. His tongue was clean, he had no pain anywhere, but much discomfort and gave the usual cardio-renal picture. His bowels functioned regularly. His heart showed no valvular lesion, and his lungs were normal at this time. The musculature of the heart showed some evidence of degeneration. His condition became sufficiently serious for him to be removed to Jewish Hospital, July 5th. The urinalysis while under Dr. Collins' care failed to show the presence of sugar and he improved somewhat under the restricted diet given for cirrhotic kidney (Bright's).

A few days before I saw him his symptoms became more severe and suddenly there developed on Sept. 10 pain in the left arm with some lividity of the left hand. Under the application of heat and posture, there was some improvement, but the following day the mottling became pronounced, at which time I first saw him. At this visit there was sufficient response to sensation and to pressure and position that it was decided there might be a favorable termination. The diagnosis of embolism was made at this time and the question of embolectomy was considered and discarded because of his general condition, feeble heart-action, crippled kidney and marked odema of both legs, much more marked in right. It seemed likely that there was

*Read before the Louisville Medico-Chirurgical Society Nov. 10, 1922.

a possibility of other emboli forming and this with the problematic outcome of an effort to remove the cloth made such procedure unwise. The apparent improvement was only temporary and his hand became definitely gangrenous. He came to operation on Sept. 13, 1922, the amputation being completed in eighteen minutes by the transfixion method. Much speed was employed to secure prompt release of the tourniquets. He came through the operation satisfactorily and the wound healed kindly. His pulse and general condition gradually improved and he was able to leave the hospital on October 28th, in improved condition, although at the time of operation he seemed so ill that recovery appeared extremely doubtful.

P. Bull presented a lengthy article on Emboli and Embolic Gangrene (Acta Chirurgica Scandinavica, Stockholm, Jan. 17, 1922) as follows:

"Bull's heading to his long article—which is in English—is "What can more than 6,000 postmortem examinations teach us about emboli and embolic gangrene of the extremities?" In recent years he has encountered 6 cases of gangrene from embolism in the main arteries of the leg, bilateral in 2. In a total of 6,140 necropsies he found evidence of embolism in arm or leg in 15, but in 4 per cent. of the total cadavers he found thrombosis in the aorta in 9 cases and in the heart in 234. Thrombi were found in the right heart in 67; left heart in 63, and in both the right and left sides of the heart in 57. In 19 cases the thrombosis in the heart was not associated with valvular disease, hypertrophy, fibrous myocarditis or acute endocarditis. Of the 181 cases of thrombosis in the heart, 6 were in children, as also one of the 73 with valvular thrombosis. These 6 children ranged from 7 months to 13 years in age. Embolic gangrene thus is not always senile gangrene, even when it appears in the elderly. Bull concludes his analysis by emphasizing that embolism in a limb is usually merely one link in a chain of emboli in other organs, prior to, simultaneous with or subsequent to the embolism in the extremity. In his 15 cases of the latter, embolism was manifest in the lungs (9), in kidneys (9), in spleen (7), in brain (4) and in the intestines (1) in all but one of the cadavers in this group. Among the 237 with thrombosis in the heart, embolism was found in all but 48. In 113 it was in the lungs; in 74 in the kidneys; in 60 in the spleen; in 32 in the brain; in 6 in the intestines, and also the 15 with embolism in the limbs, and the one case of embolism in the liver."*

Key, (Acta Chirurgica Scandinavica, Stockholm, Jan. 17, 1922) makes the observation "That embolectomy is one of the most grateful fields for surgery when the diagnosis is made in time. He reviews the history of embolectomy and the clinical picture of obstructing embolism. The sudden onset of pain, numbness and disturbance in the circulation, coexistence of some heart defect, or preceding infection, or operation which might predispose to thrombosis in the heart, and a history of a tendency to embolism—these points aid in the differential diagnosis. When the symptoms develop only gradually, differentiation is difficult."

"In the 45 cases of embolectomy he has compiled, the operation was a success in 9 of the 12 cases with an interval of less than ten hours; in only 2 of the 5 with an interval of eleven to fifteen, and in only one of 3 and 4 cases with intervals of from sixteen to twenty or twenty to twenty-four hours. As thrombosis develops below the obstruction so rapidly, the outcome depends usually on the promptness with which the embolus is removed, under local anesthesia. Secondary thrombi should be removed at the same time. After removing the embolus, the clamp on the artery above should be loosened to allow the blood to sweep out any emboli from above. After suturing the vessel, if the circulation is not restored through the limb, search must be made for an embolus at some other point. As an aid in warding off further thrombosis, the sponges and the instruments and hands should be dipped in a 2 per cent. solution of sodium citrate."*

He says that if the general condition and heart action does not allow embolectomy, the embolus might be rubbed to pieces by massage in the cases seen early and adapted to this. With this contention I cannot agree because such fragmentation cannot fail to be disadvantageous. "He gives full detail of his own 8 cases of embolectomy and of 11 others done by other Norwegian or Swedish surgeons. The outcome was successful in 10. In the total 45 cases, the operation followed within twenty-four hours in 43, and the outcome was favorable in 13."

The possibility of successful embolectomy appears to the writer to be feasible and he considers it a rational procedure in suitable cases. When the operation is performed, one should remember that the clot extends for quite a distance above and below the site of the embolus. In cases where amputation is performed care should be taken to remove all the clot from the vessel above its section, this lessening the chances of sloughing of the flaps.

It might be interesting to go into a detailed study of the causes of thrombosis and embol-

*Abstract Journal A. M. A., March 18, 1922.

ism, but it will suffice in this connection to call attention to the most important factors acting outside of traumatism.

Cardio-renal disease is a very important factor—feeble circulation and the presence of infection being the most frequent determining causes, and both these conditions may be present in cardio-renal disease.

Most authorities contend that infection is necessary for coagulation in the vessels during life, but in some cases it seems difficult to sustain this contention. This case seems to point to the following concluions:

(1) That one should bear in mind the possibility of thrombosis and embolism in all cases of acute endo-carditis, in cases of cardio-renal disease where compensation is failing and in myocarditis and fatty degeneration of the heart muscle.

(2) That by measures directed to give a greater vis-a-tergo to the circulation,—thrombosis and embolism may be prevented—

(3) That by careful attention to remove local foci of infection from tonsils, teeth, prostate, etc., some of these cases may be prevented.

(4) The curative measures consist of palliation by heat, elevation of the limb, cardiac stimulants and the radical procedures of embolectomy and amputation. This latter is a confession of failure and simply removes the destroyed part.

DISCUSSION.

Leon K. Baldauf: If Dr. Sherrill's patient had an embolus in the brachial artery whence did it come? The man had sugar in his urine, he had dyspnea and also the air hunger often noted in diabetes. He was in the hospital under dietary treatment, he was sugar free when amputation was performed, and naturally the wound healed kindly.

The question in my mind is whether this man did not have diabetic gangrene. I have performed a great many autopsies and have never seen an embolus of the extremities without definite evidence of thrombosis in other parts of the body. Gangrene of the extremities the result of emboli must be extremely rare. As Dr. Sherrill's patient had sugar in his urine at one time, it seems to me diabetic gangrene has not been positively excluded.

L. Wallace Frank: Non-traumatic embolism with gangrene of the extremities must be quite rare. Of course it is well known that embolism may follow any surgical operation, especially those upon the veins. I recall one case where amputation became necessary, embolism having followed salpingo-coophorectomy for bilateral ovarian cyst; five days later the patient complained of pain in the right leg, and the next day the foot became gangrenous and had to be amputated.

Embolectomy seems feasible provided, as the essayist stated, it is performed early; but following lodgment of the embolus obstruction is often complete and not infrequently the clot extends into the collaterals. Embolectomy under such circumstances might be a difficult and dangerous procedure. I recall the case of a boy who was shot through the brachial artery; the circulation seemed good but there was an enormous hematoma. The artery was ligated about two inches above the origin of the dorsalis scapulae; the next day gangrene of the arm supervened showing that the clot had extended downward and obstructed the collateral circulation. The arm was then amputated but the patient succumbed. This case is mentioned merely to show that to be successful operation must be performed early, whether it be embolectomy or amputation.

J. Garland Sherrill (closing): My principal reason for reporting the case was its comparative rarity. The probability of successful embolectomy was discussed, but the operation did not seem feasible under the circumstances. The condition of the patient was grave, he had marked edema of the right leg and the left was swollen in less degree, his circulation was greatly impaired. Therefore embolectomy was thought unwise. The additional trauma and the more prolonged operative procedure of embolectomy might have been disastrous.

It seemed at first that the ischemia might be overcome without gangrene occurring, but despite careful treatment for two or three days there was continued progression and it was decided to amputate. At operation it was found that the clot filled the vessel lumen to the extent of at least four inches above the division of the brachial; it was not adherent to the vessel wall and was completely removed.

Dr. Baldauf's contention that this was a case of diabetic gangrene, per se, seems to be untenable. The patient had vascular changes sometimes noted in diabetes, but I do not believe he had diabetic gangrene. The onset was typical of embolism; there was sudden obstruction to the brachial circulation. Dr. Baldauf is correct in stating that in embolism of the extremities emboli are often found in other localities.

In this connection a case is recalled which came under my observation in 1890. A woman suddenly developed gangrene of the lower extremities from poplitial embolism. She was a diabetic and operation was refused by the family and not urged very strongly by the attendant or consultant. Gangrene progressed and the patient died without operation. There is no doubt that in some instances embolism occurs in diabetics. The

majority of non-tramatic and diabetic cases terminate in gangrene regardless of what may be done to prevent it. However, in the early stages of diabetic cases, by diet and proper treatment for diabetes, disease of the heart and renal system, the tendency to gangrene can to some extent be overcome; but in late stages where there is general circulatory failure the logical sequence is blood coagulation. In addition to the slow circulation one other factor is necessary, i. e., infection; this may come from foci in the tonsils, teeth, prostate, etc., and be sufficient to affect the blood plasma and cause coagulation. In some cases detached fragments may be so small that they pass through the terminal vessels without causing trouble.

In Raynaud's disease there is usually bilateral ischemia which develops gradually and is due to progressive changes in the nervous system. In other words, the cause lies in the nerve supply of the vessels and is not mechanical as in embolism. The disease does not develop suddenly, it gradually progresses and the symptoms are unmistakable.

I had occasion once to suture the brachial artery which was severed near the elbow by a dislocation. The arm became very cold, greatly swollen, and the radial pulse could not be detected. The patient came under my observation one and a half hours after the accident. The arm was placed in a hot pack hoping circulation might return while preparations were being made for operation. However, this did not happen and the brachial artery was sutured three hours after the injury. The circulation was restored within five minutes after completion of the operation. The dressings were never tightly applied and the patient made an uneventful recovery, yet he suffered from Volkmann's ischemic paralysis due in my opinion to deprivation of the tissue cells of blood for a period of three hours. This is mentioned to emphasize the contention (Bull and Key) that to be successful embolectomy must be performed early. If the operation be too long postponed, if ischemia has been present, atrophy, muscular fibrosis and deformity will be the logical outcome.

Endemic Urolithiasis in Siam.—Schneider reports from Bangkok his experiences with stones of the bladder. The cause is unknown. The poorer classes are much more subject to the disease than the wealthy; 42 per cent. of the cases were under 15 years old. Anal prolapse leads us to suspect a stone. Lithotrypsy could be used only exceptionally. In his last series of seventy cases all were males except five. In four other cases he removed a calculus from the urethra of infants, less than a year old, which had been exclusively breast fed.

MYOSITIS, SUPPURATIVE, CIRCUMSCRIBED ACUTE, OF THE ABDOMINAL WALL.*

By P. C. Layne, Ashland

In the many text books on general and special surgery which I have consulted for information on the above subject I have been able to find very little in a general way, and nothing in particular, that relates to it.

This paucity of text book information on the subject inclines me to the belief that abscess situated in the rectus muscle simulating intra-peritoneal pus accumulations, is either of extreme rarity or else writers on surgery of the abdomen consider the question of such minor importance that they have failed to give a detailed description of the process.

With the first of these conclusions I am in full accord; but from the second I dissent, believing that the question should have a clearer exposition, especially from the diagnostic point of view, as knowledge gained in this way or by experience may be the means of arriving at a sane and safe method of treatment where otherwise severe damage or even death may be inflicted through ignorance.

Myositis purulenta may be general or local and may attack any of the muscles of the body, but the particular variety to which this paper relates is the circumscribed accumulations of pus located in the anterior abdominal wall to the right or left of the median line, below the umbilicus, although the description may as well apply also to the same conditions located in the lateral and posterior abdominal walls.

Suppurative myositis develops in a variety of ways, involving both the interstitial and muscular tissue; infection of the former usually takes the form of sero-fibrinous and purulent inflammation, while that of the muscle fiber appears as a parenchymatous degenerative process.

Ectogenous infections are the result of pus, excitants of various kinds, and of putrefactive bacteria, which gain access to the tissues through punctured, lacerated, and contused wounds. Hematogenous invasion occurs as a part of a general infection, and appears in one or more muscles in the form of circumscribed abscesses, the result uually of the deposition of the staphylococcus or streptococcus in tissue in which the vitality is already lowered by the constitutional condition.

In other cases the causative germ has been found to be the pneumococcus, the gonococcus, the bacilli of the coli-typhoid group, and in rare instances the bacillus of influenza.

In the meagre text-book descriptions of suppurative myositis of the anterior abdominal

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wall subcutaneous contusions, lacerations, and ruptures, by developing small hematomata, are supposed to furnish suitable points of lowered resistance wherein the exciting bacteria may readily find a soil for rapid growth, Cases of obscure origin were formerly ascribed to an idiopathic or unknown source, but it is now realized that there is always some near or distant focus of infection to make clear their origin.

Two cases which the writer has seen recently had their origin in points of focal infection not far distant from the infection in the abdominal wall, the left rectus below the umbilicus being the point of attack in both instances.

There is also a secondary form of suppurative myositis in the abdominal wall which arise from osteomyelitis of the pelvis bones or from ulcer of the bladder or rectum, but as this usually occupies the space of Retzius, its description will not come within the scope of this paper.

The symptoms of suppurative myositis, are, in general, pain, swelling, tenderness, induration, loss of function, and more or less constitutional disturbance; but when suppurative myositis attacks the oblique or recti muscles certain special signs and symptoms make their appearance to which I now wish to direct your attention

Munro in the third volume of Keen's Surgery tells us that " One type of intramuscular infection that is important because of its obscurity is found in the oblique muscles or the rectus and is apparently spontaneous in origin. The more common insidious types are marked by general symptoms of infection, and local signs that suggest peritoneal inflammation. A tender tumor, localized not changing its position with respiration, accompanied by a local spasm that suggest a localized peritonitis, may easily deceive the observer. There may also be nausea and vomiting. Muscular soreness interferes with normal defecation, and if there is, perchance, a history of intra-abdominal infection at some earlier period, or a recent history of malaise, it is not difficult to conclude that the lesion is inside the abdomen rather than in the parieties."

These so-called idiopathic abscesses, to quote from E. von Bergmann, are rarely found before the age of thirty, and are more common in men than in women. They are ushered in with nausea, vomiting, and disturbed intestinal action, symptoms which are undoubtedly due to peritoneal irritation, and which are not usually to be distinguished from real peritonitis. Later local symptoms develop, especially pain which may be so intense that the patient avoids any exertion and lies with the thighs flexed on the abdomen in order to relax the abdominal muscles. Soon the characteristic swelling appears and persists even after the bladder has been emptied with a catheter."

Perhaps the most important factor in connection with this subject is the diagnosis; or I should say its differential diagnosis from intra-abdominal conditions which it may so closely simulate as to deceive the most elect observer. The points upon which one should lay particular stress in making a diagnosis are to my mind the following: (1) A careful history of the case should be obtained, due consideration being given to the mode of onset, time and character of symptoms. (2). Diligent search should be made in the neighborhood of the abscess for evidence of a recent or healed focus of infection. (3.)The shape and outline of the swelling may assist us, as the purulent accumulation within the rectus musele is usually located in a pocket delimited above and below by the linae transversae and assumes the shape and outline of an inverted saucer, or the mass is considerably elevated in the center to shade off into the healthy surrounding muscle at the margin's imparting to the examiner's fingers the impression that the margin suddenly breaks off leaving a blunt, obtuse edge. (4.) Another valuable sign to my mind is the extreme rigidity of the affected segment of muscle, this rigidity remaining unaltered throughout deep narcosis from ether, and is in all probability due to the hyper—stimulation of the nerve fibers going to the affected segment of muscle as well as to inflammatory edema and cellular infiltration of the affected tissues. (5.) The most definite information regarding the true nature of the swelling, is however to be gained by directly incising it, and it was by this method that a correct diagnosis was made in two cases which the writer has had the opportunity of seeing recently, and he is firm in the belief that by this procedure alone could the diagnosis have been made certain.

While incision is the only key to unlock some of these knotty problems, it may be used with judgment and understanding. If one should mistake an intramuscular abscess for an intra-abdominal pus accumulation and boldly slash open the parieties as I have seen some brilliant operators do, he would in all probability be the direct cause of the patients death; for he would carry virulent infection from a comparatively harmless intramuscular abscess into a clean peritoneal eavity with nothing but the utmost hazard to the patient's life.

On the other hand if the surgeon will carefully dissect his way through the superficial layers of the abdominal wall he will soon dis-

cover the evidence that will show whether the pus is superficial or deep. If in the former situation, the thickened and infiltrated anterior sheath of the rectus muscle will readily betray its close proximity to the surface; while if situated in the latter position the posterior sheath of the rectus will be the silent monitor pointing the way. If the abscess is superficial all that it is necessary to do is to enlarge carefully the opening already made and drain the pocket; per contra, if it now be discovered that the abscess has an intraperitoneal origin the incision can be deepened and appropriate treatment given. In the former case we have done our patient no harm and should expect only a favorable outcome, while if the procedure be reversed we are courting the gravest disaster.

THE CANCER PROPAGANDA.*

By A. H. Barkley, Lexington

Those of us who regularly receive and read the *Journal* may at times feel that certain subjects have been so thoroughly discussed from all angles that little is left to be said or done, this, in the light of our present knowledge may be true of a limited number of topics but unfortunately the majority of medical and surgical problems that confront us today are as yet slightly beyond their embryologic stage. The cancer problem has been before the profesion for ages, and for a long time cancer mortality did not decrease and it has been only within the past few years that decided advances and something worth while has been accomplished. The step forward has not been so pronounced in the management of this terrible malady that one should sit supinely by and say there is nothing else to be said or done, thereby, resigning our patients to their fate. Much can be done by those of us who care to take the time and it by no means requires a medical or surgical luminary to do this. "Enlighten the people regarding cancer," as every doctor can spread the propaganda and if he uses a little common sense and taet, and tells his patients a few facts about cancer and not deal too technical with them, he will have done a great service, a service that will endure for all time.

During the past fall a week was set aside as caneer week and throughout this country there were lectures, talks to various clubs, newspaper articles and advice regarding cancer thrown on the screens of the various motion picture houses in every hamlet and city, this will of necessity be productive of the greatest good.

Many readers of the *Journal* well remember when typhoid, yellow fever, diphtheria, smallpox and malaria annually claimed many victims, and while it is true that specific medication and improved sanitation has caused some to disappear while others have to a very considerable extent been rendered almost inert, cancer stands out boldly challenging any and all efforts to check its ravages, thus in 1912 there were 70,000 deaths from cancer in this country. In 1913 there were 75,000 deaths in 1915 there were 80,000 deaths, in 1918, there were 85,000, and at present time there are nearly 100,000 who annually die from cancer. There is some reason for this appalling increase and after a very careful analysis of the whole subject one can not but help coming to one conclusion, that is from our present knowledge of the subject nothing definite is known as to the cause of cancer and while great advances have been made as regards treatment, radium, X-ray, surgical and other methods, these latter are rendered nil when trying to cope with a well established case or one of advanced cancer, and our only hope to materially reduce the increasing death rate lies in "educating the people."

The writer has written to 24 doctors and surgeons in this country since our last eancer week propaganda and he received answers to all, except three, which were encouraging in the extreme. It is true the number is small but may be taken as a criterion and many others have had similar experiences. Twelve letters were sent to doctors in small towns, and in the rural district and twelve to doctors in our large cities. One doctor in a large city failed to answer while two failed in the smaller towns. The following question was asked of all:

"Since our last "Cancer week" how many patients have consulted you for supposed or actual conditions that they thought were or might lead to malignaney?"

There were 63 people who eonsulted 21 doctors and of this number 9 had well established cancer, and 41 had no trouble whatever, but came as a matter of precaution. Five had growths that were evidently in the precancerous stage. The remaining eight cases had either lipomas, skin tags or other non-malignant conditions. To the above may be added three cases that consulted the writer all of which had no evidenee of malignaney. Of the forty-one cases in which nothing was found it may be safe to assume that they were imbued with the idea that an examination could do no harm and might do some good. Hence—*Praestat cautela quam medela.*

The nine cases that were malignant, five of these were eancer of the breast, three of the uterus and one of the lower lip. From what

*Read before the Fayette County Medical Society.

we at present know of this trouble at least all could have been saved or their lives prolonged had they received the proper treatment in the precancerous stage, or to put it better, if they had known enough to consult a doctor in the incipiency of their trouble or had been in the habit of having periodical examinations made by a competent doctor or surgeon. If the five cases in the precancerous state act on the advice given they may be saved thereby, avoiding much mental and physical suffering. The eight remaining cases that had other than malignant conditions acted wisely in ascertaining their true status and in all probability will keep in touch with their doctor who will be in better position to deal properly with their ailment should necessity arise.

The statement can confidently be made that the 61 cases, cited above, together with the three cases of the writer, sought advice as the result of the cancer propaganda and it is entirely probable, and very possible that had no such knowledge of cancer been disseminated many if not all of these cases would have sought no advice or at least advice too late. It is true that many cases in the early stages may elude detection by the most expert as is occasionally seen in those deep seated lesions with typical symptoms that are not susceptible of either sight or palpation, but these errors, with the improved technic in diagnosis are fortunately becoming fewer than formerly.

The true value of the precancerous state can only be appreciated when we recall the fact that about 85 per cent of all cases of cervical cancer are well advanced when first seen by the surgeon, and the same percentage with reference to gastric cancer holds good. Breast cancer about 35 per cent have past the stage where a permanent cure may be expected, and it is the duty of the doctor in instructing the laymen, to emphasize this precancerous stage in such a way that an indelible impression will be made on their minds that will cause them to seek early advice and it is only in this manner that the mortality of cancer will be materially lowered.

Lest the doctor think that the laity is entirely to blame for advice sought too late, it will be well to remember that the Cancer Commission of Pennsylvania a few years ago found, after a most thorough investigation of 400 cases of cancer, that the fault lay with the doctor, and that the laymen heeded the warning words of Horace—Occultare morbum funestum—in all but a few instances. It also developed the fact that the majority of patients that consulted their doctors were in most cases superficially examined and in some, no examination at all was made. The net result of this commission's investigation was a most terrific indictment against the profession, and it is to be hoped that any such investigation on this subject in the future will place the doctor in a more favorable light as the public is willing and eager to know the facts regarding such things as pertains to their health, and it may be confidently expected that in the majority of instances will govern themselves accordingly.

The cancer proaganda can not be too strongly put up to the public and all efforts in that line should receive the support of every doctor in the country that the fact should be kept clearly in mind that it is only through "educating the public," that we can expect to accomplish much.

Let's keep up the propaganda.

TESTING THE VALUE OF ANTISEPTICS.*

By C. C. Howard, Glasgow

Antiseptics mean so much to the welfare of your patient, that they are always worthy of our deepest consideration. With the idea of trying to find those of real value and culling out quite a few these tests were made. Series No. 1-2-3-4-5 were tested with a pure colon infection from an acute pyelitis.

Series No. I.

Control—Very good growth.

Pyo-Atoxin, 1 in one glass water—Good growth.

Argyrol, 20%—Fairly good growth.

Protargal, 2%—Very good growth.

Cyanide of Mercury, pink, 1-1qt. water—Good growth.

Silver Nitrate, 1%—No growth.

Formin, 1-1 glass water—Fairly good growth.

Series No. II.

Control—Very good growth.

Bichloride of Mercury, 1-1 glass water—No growth.

Phenol, 1%—A very little growth.

Phenol 2%—No growth.

Phenol, 5%—No growth.

Cyanide of Mercury, pink, 1-1pt. water—No growth.

Lysol, 3%—A very little growth.

Series No. III.

Control—Very good growth.

Normal saline, on culture—Very good growth.

Cyanide of Mercury, pink, 1-1pt. tap water cold—No growth.

Lysol, 5%—No growth.

*Read before the Barren County Medical Society.

Series No. IV.

Control—Very good growth.
Culture on ice, 10 min., then cultured—Fairly good growth.
Culture, just brought to boil—A little growth.
Culture in water, boiled 2 min.—Very little growth.

Series No. V.

Control—Very good growth.
Tr. Iodin—Very little growth.
Tr. Iodin, 50%—Very little growth.
Dakins, 1%—Very little growth.
Dakins, ½%—A little growth.
Aromatic Chlorazene, 1 teaspoonful in 1 glass water—Fairly good growth.
Tr. Benzoin, Compound—Very little growth.
Dobell's solution—Very good growth.

Series No. VI.

Hands without cleansing—Very little growth.
Hands thoroughly washed—A little growth.
Hands immersed in cyanide, 1-1pt. without washing—A little growth.
Hands thoroughly washed and immersed in cyanide—No growth.
Gloves, after being in cyanide 5 min.—No growth.

Series No. VII.

Skin, before any application—A very little growth.
Skin, thoroughly washed—1 small colony staphylococci.
Skin, without washing, applying alcohol—No growth.
Skin, after thoroughly washing and applying alcohol—No growth.
Skin, after applying 50% Iodin and removing with alcohol—No growth.
Potassium permanganate, 1-1pt. water—Very little growth.

Series No. VIII.

Knife, before sterilization—Staph. and Dip, good growth.
Scissors, before sterilization—Fairly good growth.
Knife after 5 min. in alcohol—No growth.
Scissors after 5 min. in alcohol—No growth.
Knife, after 5 min. in Cyanide 1-1pt.—No growth.
Scissors after 5 min. in Cyanide 1-1pt.—No growth.
Knife, after 5 min. in 20% Carbolic—No growth.
Scissors after 5 min. in 20% Carbolic—No growth.

Series No. IX.

Cystoscope in Cyanide, pink, 1-1pt. 1 min.—No growth.
Tap Water, cold—Colon Bacillus.
Tap water, Hot—Colon Bacillus.
Thermometer (no sterilization)—Two small colonies Strep.
Syringe, sterilized as usual with alcohol—No growth.
Thermometer, temperature taken and immersed in alcohol—No growth.
Those that prohibited growth:
Cyanide Mercury Solution (1 tablet gr. VII) to each pt. of water. Use the pink tablets, coloring the water is for safety. This solution doesn't injure your hands or damage instruments; the ideal antiseptic for the busy doctor.
Bichloride Mercury—An excellent antiseptic, but causes roughness of hands and damages instruments.
Silver Nitrate 1%—The only efficient one in G. U. work.
Phenol, 2%—An excellent one, but not so practical as others.
Alcohol and Tr. Iodin—Both reliable for the skin.

CYSTS OF THE SPLEEN, SPLENECTOMY, REPORT OF CASE.*

By W. L. Gambill, Ashland

The relative infrequency of splenic disease and the consequent neglect to refresh our memories as to the structure and functnon of the spleen justifies, in the writer's judgment, a brief review of its anatomy and physiology. The spleen is situated in the left hypochondrium, its upper pole on a level with the ninth dorsal spine, its lower pole extending to the level of the first lumbar. The axis of the organ corresponds to the long axis of the tenth rib. It is well protected by the ribs, lies deep in the abdomen back of the stomach and splenic flexure of the colon, and is held in position by folds of the peritoneum which constitute the gastro-splenic omentum, the phrenocolic and lienorenal ligaments. The organ has two main surfaces, the convex or parietal surface corresponding to the 9th, 10th and 11th ribs, being separated from them by the diaphragm and having interposed at its upper portion the pleura and lung. The visceral surface is directed downward, forward and inward, and is in contact with the stomach, splenic flexure, left kidney and tail of the pancreas. The hilum is situated at the posterior aspect of the gastric surface, and serves as an entrance and exit for the blood vessels, lymphatics and nerves. The spleen has two coats, the outer peritoneal and the inner fibro-elastic; at the

*Read before the Boyd County Medical Society.

hilum, the inner coat is prolonged inward and forms the sheath for the blood vessels. From these sheaths as well as from the inner aspect of the fibro elastic coat, trabeculae are given off which unite to form the true framework of the spleen, in the space of which is contained the splenic pulp. It also contains non-striated muscle fibres. The average weight of the spleen is 200 grams (6½ oz.) its length 10 to 13 cm., its width 7 cm and its thickness 3 cm.

The spleen gets its blood supply from the splenic artery, the largest branch to the celiac axis. Its course is outward along the upper border of the pancreas and before entering the hilum divides into 5-8 branches which lie between the layers of the lienorenal ligament. They divide and subdivide and ultimately form terminal arteries in the splenic substance. The vasa brevia 5 to 7 in number arise from the terminal branches or termination of the splenic and entering between the layers of the gastro-splenic omentum are distributed to the greater curvature of the stomach. The splenic vein is formed by several large branches which leave the hilum run behind the pancreas below the artery, and joins the superior mesentery behind the head of the pancreas to form the portal vein. The nerve supply is derived from the solar plexus and enters at the hilum. The spleen is the largest of the ductless glands, and like the other members of this group, very little is definitely known of its function. After much study and research by many different workers, its true function is still clouded in doubt, and we know very little more at the present time, than in our student days, when we were taught that it was "the birth place of the white blood cells and the graveyard of the reds."

Other theories advanced are that during digestion it acts as a kind of reservoir to the portal circulation, and helps to regulate the supply; that it plays a part in metabolism, because of the presence of such nitrogenous compounds as xanthin, uric acid, ademin, etc. That the spleen contains enzymes, oxidase, adenase and guanase which can produce uric acid from the split products of the nucleins. Another theory advanced by Schiff is that the spleen contains an enzyme, which, when carried to the pancreas, converts trypsinogen into trypsin. Roy has shown that in cats and dogs there occurs about every minute a rhythmical contraction of the spleen brought about by the non-striated muscle-fibers in the capsule and trabeculae. This contraction may help to promote circulation through the large splenic spaces, but its real significance remains undetermined.

Pearce and Karsner think that the spleen controls and regulates blood destruction and possibly blood regeneration. Since it is a well known fact that the spleen is enlarged in infectious diseases and intoxications it is probable that the spleen like the other lymphatic structures of the body may act as a barrier to infectious micro organisms and their products.

Historical—The first case of extirpation of the spleen is said to have been performed by Zaccarelli in 1549, but this is viewed by Sir Spencer Wells and others as apocryphal. The first authentic case was in 1826 by Quittenbaum of Rostock. The patient, a woman, succumbed at the end of six hours from shock. In 1855 Kuckler of Darmsstadt, performed an operation upon a man who had enlarged spleen from Malaria, the patient dying two hours later from hemorrhage. The first opcation in England was performed by Sir Spencer Wells in 1865. The patient lived six days. The first case of cyst of the spleen is recorded by Andral in 1829; the cyst was found post-mortem. The first successful splenectomy was performed by Pean in 1867, the operation being performed for cyst.

Cysts of the spleen are rare, except the echinococcus variety in countries where hydatid disease prevails. They may be divided into: (1) Hemorrhagic, (2) serous, (3) lymph, (4) echinococcus, (5) dermoids.

The cause and course of the development of non-parasitic cysts is an obscure subject demanding further elucidation. Fowler, in the Annals of Surgery, 1913, gives a detailed account of all cases reported up to 1912; 82 in number. He is of the opinion that the classifications suggested to the present time, are unsatisfactory, on account of our lack of knowledge concerning their origin.

The generally accepted view is that they begin with an extravasation of blood forming a so-called sanguineous or blood cyst; it is then conjectured that in a certain proportion of cases the blood becomes absorbed and replaced by a serious fluid, thus accounting for serous cysts. Traumatism probably plays the leading role, but hemangiomata, hemorrhage into serous or lump cysts, splenic hemorrhage during the infectious fevers, as Typhoid, Malaria, etc. may be the cause of blood cysts. While serous cysts are probably a later stage of blood-cysts in the majority of cases, yet cases occur the origin of which is undetermined. It is held by some that a serous cyst may result from degeneration of portions of the peritoneal endothelium misplaced beneath the splenic capsule during embryonic life. Another theory is that some of the splenic pulp is extruded through a rent in the cap-

sule, and a cyst is developed in the space that is left.

Lymph cysts are due to the degeneration of lymph-angiomata or to the occlusion of lymph vessels and escape of lymph. Simple cysts may develop in the splenic parenchyma, beneath the capsule, or from the tissues at the hilum and become insinuated between the layers of the gastro-splenic omentum. In the large cysts of the last named variety, the spleen is elongated and flattened out between the cyst proper and the chest-wall. Any of the cysts may be unilocular or multilocular.

Among native Americans, echinococcus cysts are almost unknown, but in countries where hydatid disease prevails, they are not uncommon. They are generally associated with the same disease of other organs especially the liver. In 1901 Lyon collected 241 cases of echinococcus diseases reported in North America. The nationality of 149 was determined and among these there were only two Canadians and one American, the rest being foreigners (136) negroes (10), undetermined (92). Of the 241 cases, the spleen was the seat of the disease in only nine (3.7 per cent). According to Thomas the spleen is affected in 2 % of all cases of hydatid disease. Von Bergman places the estimate at 1 to 3%. It is thought that the embryos reach the spleen by boring their way directly through the intestines or the gastric wall where these organs are in contact with the spleen. It is improbable that they enter the spleen through the blood stream as they would have to travel against the current.

Symptoms—Pain in the left hypochondrium is the most constant symptom and may be felt long before the presence of a tumor is detected. Pain from mechanical traction, referred to the left axilla and shoulder is also frequently complained of, and tenderness over the mass after painful attacks is not uncommon. Dyspnoea, indigestion, flatulence, at times, nausea and vomiting, and constipation from pressure on the bowel may occur. There is always present a sense of weight and discomfort. Infrequently the tumor first attracts attention of the patient. Weakness and loss of weight are generally present. The site of occurence, the slow growth, a possible history of trauma, the fact that the tumor dullness is confluent with the splenic dulness, the moving of the mass with respiration are the most important objective symptoms. Fluctuation may be elicited. Tumor of the kidney, cyst of the pancreas, left lobe of the liver, omentum and mesentery must be considered. A complete diagnosis is often impossible.

Treatment—The modern treatment for cyst of the spleen, when practicable is splenectomy. This may be rendered difficult or impossible by extensive adhesions, especially to the diaphragm, in which case incision and drainage may be practiced. The after-effects of removal of a normal spleen are enlargement of the lymph-glands, tenderness of long bones, loss of weight, weakness, thirst, polyuria, abdominal pain, elevation of temperature, and rapid pulse. Certain blood changes are said to be constant, the chief of which are diminution of hemoglobin, and red blood cells, with an increase of white cells especially the mononuclears. These changes reach their height in about two weeks and do not become normal for two or three months. These changes are said not to take place in children following the removal of diseased spleens of adults owing to the fact that the compensatory organs have gradually assumed the functions of the spleen. It is claimed by some that splenectomized animals can withstand an enormous loss of blood, even up to one third of the total amount, without apparent ill effect. Congenital absence of the spleen has been reported.

Case Report

Mrs. L.—northern Italian, age 41, came to U. S. A. at age of 26 years. Family history—Father died at age of 65 years. Cause Stomach trouble, sick one year. Mother living, age 65 years, health good. Two brothers living and well, 1 killed in war; 4 sisters, living and well.

Personal History—Mother of 6 children, ages 14 years to 8 months, all living and well. Patient has always enjoyed good health until 4 years ago, when she first noticed pain in left hypochondrium. Pain gradually grew more severe, with radiation to left. Axilla and shoulder and sometimes to epigastrium. During last six months noticed extreme tenderness over tumor following attacks of pain. Dyspnoea was noted at times. Sense of fulness and discomfort present at all times, with digestive symptoms, eructation of gas, etc., gradual loss of strength and appetite, had lost 20 lbs. in weight. Bowels constipated. Physical examination negative, except tumor in left hypochondrium reaching to the median line and to the level of umbilicus; tumor tense, comparatively smooth, movable especially upward, dull on percussion, dulness extending to splenic region and left iliocostal space, moved up and down with respiration, very little or no tenderness on palpitation, fluctuation not made out, splenic notch not palpable. Urine negative, except trace of albumin in cathetized specimen. Wasserman negative. Blood negative except mild secondary anemia, negative for malaria, temper-

ature 98 6 F., pulse 86, respiration 24. No history of trauma.

Diagnosis—Splenic tumor.

Operation Jan. 24. 1923—Vertical incision through outer edge of left rectus, extending from costal margin to level of umbilicus, splenic cyst diagnosed, great omentum adherent over face of tumor, cyst extending between the layers of gastro-splenic omentum, stomach pushed to the right, very large thin walled and friable vessels in cyst-wall, pancreas, thinned out and adherent over antero-inferior surface of cyst, spleen elongated and flattened out over outer surface; cyst springing from the tissues at the hilum. After careful separation of adhesions under inspection, all vascular ones being cut between ligatures, splenectomy was performed by the method of Balfour. The greatest difficulty encountered was in ligating the gastro-splenic omentum at upper portion of the stomach. Wound closed without drainage. Cyst contained about ½ gallon of serous fluid. Contents negative for hooklets and scolices.

Convalescent record—Moderate shock, unable to void urine for 72 hours. Morning of third day pulse went rapidly to 156, weak, thready, extremities cold, breathing shallow and it looked as if the end was near, but after heroic stimulation in about an hour or two pulse came down to 130, volume fair, extremities warm, facies improved. Wound healed per primam. Her convalescence has been slow and marked by two very notable features, tachycardia, (120-140 for 21 days) and profound weakness. She has had slight pains in lower extremities, but no lymphatic enlargement has been discernible. Blood count at end of second week showed only a decrease of hemoglobin from 80 per cent to 70 percent with slight diminution in number of erythrocytes. She was put on iron Citrate and Nuclein Co. per hypo and extract of spleen and bone marrow per oram. She was discharged on thirty-second day following operation.

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Mayo & Balfour in Ochsner's Surgery.
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Treves, Van Bergman, DaCosta, Sajous.

Restoration of Round Ligaments.—The operation devised by Nyulasy consists in splitting the anterior leaf of the broad ligament parallel to the round ligament, between the round ligament and the bladder, undermining the opening, and closing it by a purse string suture, the outer limit of the suture being in the vicinity of the internal abdominal ring and the inner limit being toward the uterine cornu. The immediate effect is to bring the uterus into anteversion, and the undue laxity of the anterior leaf of the broad ligament is reduced.

LINCOLN COUNTY MEMORIAL HOSPITAL.*

By J. G. Carpenter, Stanford

Attention, Stop, Look, Listen, think and be happy, work and pray for a Noble Cause and give freely of your time, work, money and influence. At this time and for many years, a Hospital has been greatly needed in Lincoln County. The time has arrived for every citizen to do his duty: Do not knock and kick but, be a doer, a leader, a puller and a pusher.

To the Tax Payers, Churches, Sunday Schools, Public and Graded Schools, County Board of Education, Women's Club, American Legion and Masonic, Odd Fellows, Maccabees, and Knights of Pythias Lodges, and all other citizens and ex-citizens of Lincoln County, Kentucky—Be it known to you that an heroic effort is being made to build a Lincoln County Memorial Hospital to be erected to God and dedicated to the wounded, maimed and dead soldiers of Lincoln County, who made the great sacrifice for us: their homes and country in the late European war and helped to make the world safe for Democracy and have forever relegated autocracy and kaiserism to the Past. Forty or more of these heroic soldiers are buried in Lincoln County Soil and died for us.

Will you not subscribe freely to the Hospital Memorial Fund and work and pray for its success? Get on fire with religious zeal for God, the Hospital and Humanity; teachers, Trustees and Pupils of the Graded and Public Schools should give entertainments, concerts, and pie suppers for the Memorial Hospital. A subcription has already been started and many have subscribed freely, yet, only a few people have been seen in a few hours' time. The Fiscal Court will soon be called on to contribute to this worthy cause and many good people have promised.

Let us honor at home our dear heroic soldiers who went "Over seas" and "Over the top" and did glorious deeds for us "Over there." It is now our time to go "Over the top" and make another victory for the victors. The Memorial Hospital is needed from a business standpoint. A hotel or boarding house is not the best place for a sick person. They are for well people. Everybody's business will be benefitted by a Hospital. There then will be a place to take the sick, injured and crippled. Many, many lives would be saved, the injured and crippled and blind saved, restored to health, sight and strength at home and made self sustaining and hundreds and thousands of dollars saved to private individuals; the public and taxpayers, and the money kept in Lincoln County that now

*Read before the Smith County Medical Society.

drifts to other counties and never returns to Lincoln County. Nurses could be trained in our Hospital Training School, and many people made bread winners and self sustaining by nursing. Before the Great War, the U. S. Statistics proved every healthy boy or girl 16 years old was worth $700.00 to the Commonwealth by what they earned and consumed. Today, the world needs more laborers than ever before and we must conserve the health, the worth and labor of the working people.

The work of the all time Community Health Nurse Miss Roth, has been one of the greatest blessings to the County and money saved the tax-payer. The Trachoma Clinic she assembled here is strong proof of the need of a Memorial Hospital. Yet, we have physicians and surgeons prepared and equipped and skilled to hold a Trachoma or any other Clinic and give the best of medical and surgical treatment and do the major sugical operations. The largest and most successful major surgery has been done in the past by Lincoln County physicians and surgeons and can and will be done in the future by them. It is up to every county to do its duty to have a hospital and the best of doctors. The Doctors and the hospital are the largest asset of any county and do more good and bless humanity more than the church and preachers. Yet, the Memorial Hospital is the hand maiden to the church of the Great Physician. Many, many souls are saved every year in Hospitals who were never in a church.

Had Lincoln County been a Catholic community a public hospital would have been built years ago. It is said that Catholics do religion by building Hospitals and other good Samaritan deeds.

Dear Readers, what will you do for the Hospital? Christian, People, Readers, Loyal Kentuckians, and American Patriots, shall this be said of you—"God and the soldier, we all adore, Just on the brink of danger, not before. The danger past, both alike requited, God forgotten, the soldier slighted." Methodists, Presbyterians, Church of Disciples and Baptists, what will you do to help establish the Memorial Hospital, to be dedicated to the dear, heroic soldiers of Lincoln County, who made the supreme sacrifice for us? Any county that has a pooled tobacco warehouse, can have a Memorial Hospital. Look out for the Mass-Meeting at the Court House at an early date, be present and help make the Memorial Hospital a success. This hospital will be of the people, for the people and by the peole and conducted by a board of trustees and not by the doctors, equal rights to all; exclusive privileges to none.

A generous public has helped in the past to build churches of every denomination in Lincoln County and donated freely to pay hundreds and thousands of dollars due on churches that, they might be dedicated out of debt; likewise, the doctors have given hundreds and thousands of dollars to the ministers, their familiies and the churches and during revivals "and $500.00 to $850.00 have been donated time and again for each revival" by a generous public. The time now has come to show what they, the churches, can do for the Lord and humanity; to build a Lincoln County Memorial Hospital erected to God and dedicated to our heroic and brave soldiers. We owe them a testimony, a "memorial." We believe the churches should take the major role in establishing the Hospital. If they have thanks and praise service for God and a generous public, they will help perfect the hospital; therefore; onward Christian soldier and do your duty. Leaders of the "Word," Ex-Lincolnite, who have inherited or made large fortunes in Lincoln County and moved elsewhere, should return to our dear Lincoln County, do their share and give hundreds of dollars to Hospital Fund, this would cast aside ridicule and show profound gratitude for what Lincoln has done for them.

Shall the hospital be established by popular subscriptions or joint stock company? Will the churches of each denomination take and furnish a room in the Hospital and dedicate same to the chain of churches? Will the Masons, Odd Fellows, Knights of Pythias and Maccabes Lodges, take a room and furnish it and dedicate same to its respective lodge? Many desirable locations have been offered for sale and valuable contributions to go with the sale of property. Be there a soul so dead, that can not say of Lincoln County, My own, my dear Native Land, Land of Pilgrims, fathers and mothers and where they lived and died, the land that holds our valiant heroic soldiers dead, step lightly, this is sacred soil on which we tread.

One time in Stanford, not so long ago, several members of a certain church desired a new church building and each one pledged individually $300.00 to $3,000 for a new building. We have enough churches in Stanford and Lincoln County with a capacity to hold and save all of its people, a salvation Hospital of soul, body, limbs and organs is the great need of this present day, when you give to a hospital you give to the Lord. When our soldiers, boys, had left their home, families and county, all that was dear and sacred in life to go over seas and fight for world peace, freedom and Democracy, to be shot, gassed, bayoneted, bomb shelled, wounded and killed for us at home, offering themselves

a living sacrifice; we at home including patriots, slackers and profiteers, said in public and private, there was nothing too good for our soldiers, nothing too good for them now. Honor them and serve God now, by building the Lincoln County Memorial Hospital.

Many, many rich men have passed away; leaving large fortunes for their children, give nothing to public charity, and have their heirs to fall out, fuss and scrap and bring public disgrace in the Court House and their children squander the fortunes in riotous life, dissipation, a butterfly existence and they too often wind up life in poverty, humiliation and rags, with no home or comforts of home in their last days. Study history of rich people in the past. Rich man and women, prepare now while time is called today. Be ready for death and the Judgment Day and give freely to the Lincoln County Memorial Hospital to be erected to God and dedicated to our brave soldier boys and have a Hospital for your children and other peoples' children, a home for them in their last days and pilgrimage on earth. If you love God and have gratitude and praise service to him, give freely and jofully now. Your mansion in that land that is fairer than day will be built up out of the material you take to Heaven with you.

Delays are dangerous—procrastination is the thief of time. Are your lamps filled with oil and brightly burning; are you watching and watching for the Lord to appear? If so, give freely to the Lincoln County Memorial Hospital and do not be a "slacker."

Blessed be he that considereth the poor.

The Lord shall deliver him in the day of evil.

The Lord shall preserve and keep him alive, and he shall be blessed upon the earth.

Ye have considered the poor, ye have clothed the naked, and fed the starving.

Ye have given bountifully of your treasures and of yourselves. Therefore ye shall sojourn in his tabernacle, and dwell on His Holy Hill. For ye have walked uprightly and worked righetously.

Ye are of those who were honored in their own generations and were the glory of their times.

Ye shall be of them, who have left a name behind them.

Authohemotherapy in Dermatitis of Pregnancy.—Levy-Solal publishes four cases of different dermatoses of pregnancy, three of which were cured and one (psoriasis) ameliorated by injections of the patient's own blood. In one case of urticaria the second injection increased the itching very strongly, but it subsided after the third injection.

THE MANAGEMENT OF COMPLICATIONS FOLLOWING CATARACT EXTRACTION.*

By A. L. Bass, Louisville

To the operator, thoroughly trained and sufficiently experienced, the technique of cataract operation, according to the accepted modern procedures, gives little cause for apprehension. It is the complications likely to arise—either during or after the operation—which are the chief source of anxiety, and upon their successful management the final outcome of the case is often wholly dependent. Even the most skilful and experienced ophthalmologist may be confronted with the loss of the vitreous humor, or may find the opening into the cornea or capsule is not large enough; the iris may be wounded or a prolapse of the iris occur; the cataract may be insufficiently evacuated, or a dislocation of the lens may take place.

If the operative procedure is completed without any untoward complications there are still a number of accidents which are likely to happen during the process of healing. In addition to possible suppuration of the wound or prolapse of the iris, there is likelihood of iritis, iridocyclitis, panophthalmitis, striated keratitis or intracular hemorrhage; and not infrequently delirium is added to the difficulties of patient and medical attendant.

Loss of the vitreous humor takes place when the zonule ruptures; this may occur because of too much pressure on the eye ball in an effort to force the lense through too small corneal opening, or because the patient squeezes the eye, agam the zonule may have been defective prior to the operation, as in a hypermature or complicated cataract. The importance of a prolapse of the vitreous depends upon whether it takes place before or after delivery of the lens. If it takes before, it then becomes impossible to deliver the lens by pressure on account of the serious danger of increasing the amount of loss of the vitreous, and it is accordingly necessary to draw the lens out of the eye with instruments. Should this accident occur after the removal of the lens, it hinders replacement of the iris, and coaptation of the lips of the wound, as well as predisposing to suppuration. If there is a great loss of vitreous the outer chamber should be refilled with sterile normal saline solution.

If the corneal incision is too small to permit the lens to pass, too much force should not be exerted; rather the incision should be

*Read before the Eye, Ear, Nose and Throat Section of the Kentucky Medical Association, Paducah, October 16, 17, 18, 19, 1922.

enlarged with a small pair of curved scissors to a size sufficient to allow the lens to be removed. In regard to wounding and prolapse of the iris: if the iris is healthy, it will bleed very little upon being cut, as the blood vessels quickly contract; if on the contrary you have to contend with a diseased iris—as a glaucoma or iritis—bleeding very often takes place to such an extent that the outer chamber is filled with blood. Treatment consists of replacing the iris and exercising any portion with a tendency to prolapse. Intraocular hemorrhage prevents the operator from inspecting the interior of eye. In healing such a hemorrhage will be absorbed in a few days without dire results: but, where the iris is diseased—as when the patient has diabetes, or Bright's disease—the hemorrhage is liable to be extensive and the process of absorption prolonged to such an extent that it may endanger the whole metabolism of the eye.

Wheeler (1) reviewing 2, 123 operations performed at the New York Eye and Ear Infirmary from 1899 to 1909 found that:

4.57% of the entire number had hemorrhage
2.17% of the preliminary iridectomies had hemorrhage,
6.94% of the extractions with iridectomy had hemorrhage,
3.12% of the extractions after iridectomy had hemorrhage,
16.16% of the extractions in capsule had hemorrhage.

Tabulating the percentage of hemorrhage cases in each group of ten years he found:

Age	No. Cases	No. Hemorrhages	Per Cent
30-40	71	2	2.82%
40-50	251	19	7.57%
60-70	755	35	4.64%
50-60	591	23	3.87%
70-80	395	15	3.8%
80-90	56	1	1.79%

Thus it is seen that proportionately more hemorrhages occured in patients from forty to fifty years old, than in those over fifty. This may be possibly due to the greater activity of middle-aged patients.

Wheeler concludes that:

(1) Hemorrhage into the anterior chamber following hard cataract occurs in 4.57% of cases. (2) Hemorrhages are more liable to occur in middle-aged patients than in either the young or old. (3) It may occur from one to twenty-eight days after operation, and once or a number of times in the same eye. (4) Diabetes especially predisposes to post-operative hemorrhage, and the amount of sugar in the urine appears to have little influence on the liklihood of the ocular complication. (5) Albuminuria predisposes to hemorrhage, but less markedly than glycosuria. (6) In the different methods of operation, there is the greatest liability to post-operative hemorrhage in "extraction with iridectomy"; less liability to hemorrhage in "simple extraction"; still less in "extraction after iridectomy"; and least of all in "preliminary iridectomy."

If the cataract is incompletely evacuated the portion of lens matter remaining can be best removed by gentle irrigation of the anterior chamber by means of warm normal (sterile) saline solution. Too much pressure should not be exerted even if all the lens matter fails to come away readily, as this can be left for absorption.

Prolapse of the iris should be attended to as soon as discovered. I recall the case of a patient seventy years old who walked into the hospital about one year after undergoing a cataract extraction, stating that he had been "doing fine" up to the day before, when the operated eye began to give him pain. Examination showed prolapse of the iris in the outer edge of the old corneal scar with circum-corneal injection and oozing of the aqueous. Warm compresses, atropine and argyrol were ordered; but the next morning the wound showed signs of suppuration and the eye was eventually lost.

B. Kayser (2) advocates that in glaucomatous eyes blepharotomy should precede cataract extraction, claiming that pressure on the eye ball is thus lessened. He believes all cases developing glaucoma after cataract operations have an innate predisposition to that disease. He reports one case where, though there was increased tension for months, the patient got well without operation; and another with very high blood pressure where operation was delayed for several days without any ill effect.

Stieren (3) reports three cases of glaucoma occuring in eyes which were normal when operated upon: one case developing four months, one eighteen months, and one ten years after the cataract operation.

Zeigler (4) in an article on Adventitious hyaloid membrane following operation for secondary cataract reports three cases observed during his thirty years' experience. Objectively oblique illumination will show a faint iridescent sheen covering the whole surface of the vitreous body as exposed in the artificial pupil; while direct illumination reveals perfect and permanent transparency

of the cornea and vitreous media. The subjective symptoms are usually a distant vision of 20-30 to 20-50, with a reduced reading vision from J-1 to J-12. Zeigler treats these cases by a V-shaped capsulotomy.

Knapp (5) reports a case where the patient—after a preliminary iridectomy, with uncomplicated extraction and needling—reported six weeks later with a collapsed anterior chamber due to a fine fistula which was visible in the middle of the operative scar. Whitmore (6) reports two cases where petrolatum was applied: in the anterior chamber following cataract extraction; the lids being covered with sterile petrolatum following the operation and dressing applied. The results were good.

Stargardt (7) divides post-operative infection into three groups: infection of wound and cornea, infection of the sac or capsule, and infection of the vitreous. When the cornea alone is involved treatment by Kuhnt's method is advocated. The wound is examined to see if either the edge or the deep layers are involved; if the edge is involved it is freely cut away with scissors; if involvement is in the deeper layers the cornea is split and the soft tissues scraped out; the anterior chamber is irrigated with normal saline or oxycyanide of mercury solution and the wound covered with a conjunctival flap. This author believes this procedure is better than cauterization. Optochin is useful in these cases, more especially when the cornea alone is infected. In isolated infection of the anterior chamber presenting the picture of an iridocyclitis with or without hypopyon, irrigation of the chamber with normal saline or 1-5,000 solution of oxycyanide of mercury is recommended. When the capsule-sac is infected it must be removed with forceps. A case is cited in which this treatment was successful.

Butler (8) in an article on Statistics and experiences of cataract extraction, reports some interesting findings. He believes that the success of a senile cataract extraction is liable to be unfavorably influenced by three classes of complications: those which occur at the operation; those that supervene during the healing process; and finally those which may arise at any subsequent period, even years after a successful operation. He reports two series of cases. In the first series of sixty-four done in Jerusalem the results were: normal extractions fifty-two or 80.3%; lost eyes four or 6.5%. The loss was caused by panophthalmitis, one case; sympathetic cyclitis, one case; loss of vitreous, two cases. His series of two hundred cases done in England as compared with the Palestine series is:

	England	Palestine
Succesful extractions	90%	93%
Lost eyes	7.5%	6.5%
Loss of vitreous	5.5%	17%
Iridocyclitis	10%	none
Normal operation	90%	30%

The remarkable feature of the work in Palestine is the absence of iridocyclitis, as few of the eyes were clean, most of them having trachoma, no cultures were taken, nor were the lachymal sacs syringed out before operation; which leads Butler to conclude that iridocyclitis after operations on the eye is not due to infection but to a toxemia similar to that causing iritis. In his English series he reports cystoid scar three times and mania six times or 3%. Only 22% of his cases required needling, which he ascribes to three factors: his preference for a preliminary iridectomy; the fact that he rarely operates before the cataract is mature, and finallly because if the patient is satisfied with a 6-12 vision he does not needle, as he has lost two eyes by discussion, and in another case had a narrow escape.

Butler operated ten diabetic patients with the following optic results; 20-20, one; 20-50, one; 20-40 four; and lost eyes, four. He operates in the presence of a few staphylococcus albus and citreous colonies, but refuses to operate if staphylococcus aureus, pneumococcus or streptococcus are present. His net results for the 250 cases were; 87% have useful vision, 50% have 6-12 or better, sixteen eyes were lost, the majority of these before he realized the importance of removing septic foci from the teeth and examining the flora of the conjunctiva.

Posey in 1900 reported twenty-four cases where delirium occurred. Nineteen followed cataract extractions three took place after iridectomy, and two after severe eye injuries. He believes that the cause is chiefly physical. Fisher[9] reports four cases of delirium in 200 consecutive cataract operations, all of which were grave; two patients lost vision entirely; one retained 20-100, and one 20-30.

Fernandez[10] in his article on Detachment After Extraction of Cataract in Adolescents, states that the operation on congenital cataracts by discussion is advocated above all in children under ten years of age—owing to the impossibility of counting on their cooperation in keeping still. Operation by extracton on children is extremely hazardous because of the danger of surgical traumatism, while experience has proved that discission often passes unperceived. He reports the case of a youth eighteen years of age upon whom he needled a

cataract and obtained normal vision. Later a colleague operated upon the other eye by extraction, and the sight of that eye was soon lost by retinal detachment, while the eye operated by discission remained normal. In the case of one of my own patients, a boy nineteen who had suffered with a traumatic cataract since the age of eight, the condition was completely cleared up with a single needling.

In conclusion I would make a special point of the necessity of careful post-operative treatment. Too often the opthalmologist is content to perform a technically correct operation, and leave the after-care in the hands of those who do not appreciate its importance. Millette[11] has recently emphasized the value of making the patient comfortable, both psychically and physically, and if he complains of his back, he is permitted to lie on the side opposite the operated eye. Millette also gives the patient the use of the unoperated eye, as he has found that in elderly patients especially the effect of keeping both eyes bandaged seems to bewilder and confuse the mind, inducing a feeling of fear and a desire to protect themselves from impending danger. Since adopting this procedure he has had no cases of post-operative dementia, and the increased freedom of movement which he allows these patients has lessened the likelihood of kidney and bladder complications. The most successful and satisfactory after-treatment will be that which interferes just as little as possible with the patient's normal physical and mental processes.

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DISCUSSION

Gaylord C. Hall: A paper of this character brings up so many important angles in the treatment that it is difficult to indicate more than one or two in your discussion.

In order to prevent complications I consider first in importance the thorough study of the case before operation and the taking of such steps to assure the safety of the eye as the study of the case shows the necessity. For instance, the elimination of a chronic conjunctival irritation, or disease of the tear sac; the treatment and eradication of disease of the sinuses and diseases of the gums and teeth; the elimination of the chronic intoxication through the digestive tract, and the control in so far as possible of infections in the kidneys and bladder.

These troubles, which would act as a focus of infection giving rise to chronic uveal irritation following the operation, or direct infection of the wound at the time of the operation, having been adequately dealt with should minimize such complications.

Loss of vitreous in unruly patients will always be a hazard of the operation.

The personality of the operator is a factor in securing self control.

Post operative insanity which follows more frequently after this operation than any other may possible be diminshed by leaving the other eye open, getting these old patients used to their surroundings before operating, or in extreme instances operating in the home.

This conditiin when developed is ameliorated by removing the bandages and assuring the patient that his vision is not gone, together with drugs which tend to have a quieting effect upon the general nervous system.

In spite of our best efforts, however, some of these cases go bad and the result is the loss of an eye.

The doctor has given us a very thorough consideration of the various complications that arise following the operation and the paper deserves careful study.

I regret that he was not here in person to read the paper and further elucidate some of the details.

Adolph O. Pfingst: There is much that I could say in this subject but time will permit me to touch only upon one or two points. Speaking of the loss of vitreous I believe that technique employed in the Smith Indian operation has, in keeping the lids lifted from the eyeball, taught us, or perhaps I had better say reimpressed, a valuable point in our technique of cataract extraction and hence has lessened the frequency of vitreous loss during the operation. In practicing the cataract operation I am very careful to have the lids freed from the eye, either by means of retractors held by an assistant or by lifting the lids with the speculum. I have always believed that a frequent cause of vitreous loss is a lack of confidence of the patient, or we might call it nervousness. It has always been my practice to explain to each patient just what he is to expect during the operation and with but few exceptions have I been able to have the patient quiet during the operation and have secured his entire cooperation. It

may be that I have been unusually fortunate but my cases in which there was a vitreous loss represent a small percentage. Recently I lost some while irrigating the anterior chamber after extraction of the lens. It is my practice to endeavor in all cases to remove remnants of cortex by manipulating the cornea. Failing in this I irrigate under very low pressure.

Those of us doing our work in general hospitals are perhaps more apt to have complications after a cataract operation than those working with attendants trained for eye work. With the handicap of attendants not especially trained we must be that much more careful in our after treatment of these cases. The elder Knapp was a stickler on after-care and I attribute some of his success to this care. I confess that I am of the old school in this. I do not allow patients to get out of bed for four days after the operation and keep the operated eye bandaged for a week and the mask on at night for six or eight days. Patients are not even allowed to get up attend to nature's calls. They are fed by an attendant until one eye is opened. Notwithstanding every care accidents happen. To illustrate, I would cite a case in which the operated eye was doing very well when on the fifth day the attendant in putting dark glasses on the patient struck the operated eye with the temple of the frame, causing hemorrhage into the anterior chamber which was followed by iritis and finally closure of the pupil. In another case the patient was pulling up his cover when his hand slipped off the hold and struck the operated eye, causing internal hemorrhage. Strange to say the same acident happened again a year later when his other eye was operated. Fortunately, both eyes cleared up.

Septic Absorption in Diffuse Septic Peritonitis.—Judged from Costain's experimental observations, it would seem that the first procedure, after a diagnosis of diffuse septic peritonitis has been made, would be to establish a thoracic duct fistula, and at a later date such other operative measures as the situation warranted. The operation could be done with greater facility in the human than in the dog, as the duct is more accessible and, being larger, could be drained more successfully. The emaciation could be combatted by blood infusions or transfusions. By checking the septic absorption, those distressing complications which are met so frequently in peritonitis would be largely overcome. The conclusion to be drawn from this experimentation is that in diffuse septic peritonitis death travels through the thoracic duct.

Experimental Soot Cancer.—Cancer was produced by Passey by means of soot mixed with quicklime. In animals fed a fat soluble poor diet the tumors appeared a little earlier.

THE VALUE OF ENTEROSTOMY IN SURGERY.

By Fred W. Rankin, Louisville
Professor of Surgery, University of Louisville

Enterostomy as an emergency measure in acute intestinal obstruction has long been recognized as an advantageous maneuver, and within recent years its application to chronic surgery, as a prophylaxis against post operative distention from gas and consquent pressure on recently made anastomoses, has enlarged its field of usefulness. The picture which sometimes presents itself following celiotomy, in which contamination is either already present or is unavoidable, is one of such disaster that a suitable method of relieving the accompanying distention from flatulence is frequently necessary and a satisfactory agent is found in the employment of either caecostomy, enterostomy or appendicostomy.

To Renault is given credit for being the first surgeon to employ deliberate drainage of the small bowel in an emergency case; his patient having a strangulated hernia.

Nelaton, in 1858, successfully applied enterostomy in the relief of acute intestinal obstruction. It has been the practice in recent years, among the majority of surgeons, in applying enterostomy to a severely toxic patient with intestinal obstruction to institute the drainage into the first distended coil of bowel which presents itself into the wound. To Victor Bonney however, we are indebted for the application of a principle which goes a litle further and applies the enterostomy to the jejunum, or as he termed it " segment of toxicity," which is in reality the portion of the small bowel containing the fluid content.

MacKinnon also, several years ago, advocated jejunostomy high in the bowel in obstructed individuals by technique which approaches the jejunum in its first part without exploration.

Somers who has had a wide experience, differs with Bonney upon the advisability of always making the jejunum the site of the enterostomy but prefers to select the highest loop of distended bowel unless the vomitus is fecal in character. He has emphasized the fact that the heavy loops of bowel, which contain its fluid elements, are farthest away from the point of actual obstruction.

Generally it will be found in cases of acute obstruction that the contents of the lower half or possibly two-thirds of the small intestine are mainly gas, while that of the upper division is fluid. Obviously the dissemination of the poisonous products of the strangulated bowel takes place from that por-

tion which contains the fluid and the corollary applied by Bonney was drainage of this segment of toxicity and absorption. While this necessitates occasionally slightly more exploration than does the haphazard method of placing the tube in the first loop to present itself, its practicability recommends it, in that it is a direct attack upon that portion of the bowel which is producing the symptoms.

Stone, in some admirable experimental work upon animals, proved very distinctly that the cause of death in intestinal obstruction was due to chemical intoxication which developed during a process of protein disintegration. His work has been amply verified by McKenna, Murphy, Brooks and others.

A clinical fact which has long been established is reiterated by the most of the investigators along this line, that in intestinal obstruction the height of the bowel involved is in direct ratio to the mortality; that is a duodenal obstruction proves more fatal than that of any other segment of the small intestine. With the possible exception of acute hemorrhage, no more hazardous surgical risk presents itself for treatment than a case of intestinal obstruction which may or may not be of some length of standing. Generally the obstruction remains more or less sub-acute for twenty-four hours unless it is due to volvulus or internal hernia and the association of pain and vomiting which is first merely the contents of the stomach arouse little suspicion frequently, until the later fecal vomitus makes relief imperative.

The indications for employment of intestinal drainage by enterostomy readily group themselves into four classes: First—Those cases who are seen at such a late period in their obstruction that any attempt at a radical operation would obviously be fatal, and to whom a chance may be given by drainage of the obstructed loop with a hope of a subsequent exploration and relief of the primary cause. Second—Those post operative cases which develop ileus. This generally occurs in second week unless due to a spreading peritonitis and may result from adhesions to unperitonitilized surface or to the shutting off of the bowel lumen by exudates which glue two or more loops together or may be due to an internal hernia. Third—This group takes in chronic operative procedures in which contamination may or may not occur but whose convalescence is made much easier by reduction of flatulence and gas distention which is controlled by an enterostomy acting as a safety valve. Fourth—Peritonitis where in addition to the abdominal drainage and the removal or not of the local focus, as the choice of the operator dictates, an enterostomy in the distended jejunum is made.

In hospital practice a relatively large group of intestinal obstruction cases appear at such a late date that one has the feeling that any operative procedure is likely to hasten their demise rather than to be of assistance, and it is in this group that the mortality, which exceeds fifty percent according to some observers, finds its largest number. Those moribund individuals will not infrequently respond to drainage of a loop of small bowel if it is done under local anaesthesia and without trauma and it seems that even in the extreme cases, advantage should be taken of this measure, even though benefit is going to result in a relatively small number of cases.

Post operative cases, especially those in which large raw surfaces have been left through inability to completely peritonitilize them, offer the best group of acute cases for employment of this measure. Despite the most careful attention to covering over raw surfaces a small percent of cases develop ileus during their hospital convalescence. Pelvic operations furnish the larger percent of these. A knuckle of small bowel will be caught in the pelvis and gradually become slowly obstructed. That this does not happen until the end of the first week or the beginning of the second, should place us on guard for this possibility. Generally however, there are so few objective symptoms in the earlier stages of this obstruction that the tendency to depend upon gastric lavage and the indefinite hope that the patient is having a somewhat stormy convalescense which will soon clear up, lead to a temporization which finally demands intervention. In a patient who has already undergone one operation and the subsequent discomfort of post operative convalescense, the additional danger of another operation super-imposed upon a developing toxemia of obstruction, makes radical operation unwarranted. An enterostomy then, which permits of reduction of toxemia and which tides the patient over this period of acuteness, has proven in the hands of many surgeons a very feasible and rational measure.

In chronic surgery I believe enterostomy finds its widest field of application. I recently published a series of resections of the colon, in which enterostomy had been employed as a routine measure post operatively, and with such gratifying results in the convalescense as to warrant its wider application. Following a resection of any segment of the large bowel, the fear of post operative gas distention, which will by pressure on the suture line cause rupture, is ever present. To prevent this we have made an enterostomy

about twelve to sixteen inches above the line of anastomosis, using the small tube merely as a safety valve and in only about one out of three cases has it been necessary to open the drainage tube at all. The result has been that any distention from gas has been quickly relieved, the small tube draining both the large and the small bowel although it has been customary to remove the gas in the large bowel by a rectal tube.

The difference in the convalescense in these cases and those in which enterostomy was not employed has been striking and has encouraged us to use this procedure more widely.

In acute cases of peritonitis, where the patient is profoundly toxic and where one feels that abdominal drainage is perhaps the only operative procedure condition warranted, I believe that additional enterostomy into a jejunal loop will find a field of usefulness. This has already been employed by a few men with satisfactory results and its advantages are apparent.

The technique which has been found simple and advantageous is a modification of the Witzel technique for gastrostomy. In the loop of bowel selected for an enterostomy a hole is made either with a knife or a cautery, as advocated by Long, and into the lumen of the bowel is introduced a small catheter, size number eight to twelve. A purse string suture closes the opening. The tube is now imbedded in the bowel wall for one inch to one and one-half inches by a layer of suture which infold the coats of the bowel over it. I believe it is better not to incise the serous coats as in the Coffy method of transplantation of ureters, but to include the whole thickness of the bowel in infolding it. The sutures which accomplish this should not pierce the mucosa of the intestines if possible. This tube is anchored to the abdominal wall at the lower angle of the incision. We have employed silk to make this enterostomy in a large series of cases and have always found it satisfactory. The tube drops out of its own accord, toward the end of the second week and there has never been a fistula result. The caliber of the rubber tube used for drainage is important, I think, and should be small. The drainage of not only gas, but fluid contents of the small bowel, is easily accomplished without the use of a large tube. If the enterostomy is being done as a secondary measure, it is best to go through the original incision and this can be accomplished under local or gas anaesthesia. If it is being done as a primary measure, as in group one, local anaesthesia or gas and local anaesthesia will prove advantageous. The tube may be left open without fear of peritoneal contamination from the beginning, but in chronic cases it is not necessary to open it until the occasion demands it.

Post operative treatment in any of these desperate cases should not be overlooked after employment of any emergency measure to relieve them, and the practice of frequent gastric lavage and of giving nothing by mouth is an admirable one. This not only tends to keep down peristalsis and spread of organisms throughout the peritoneal cavity, but in many ways increases the comfort of the convalescence. Adequate doses of morphine and the maintenance of the proper water balance by sub-cutaneous administration of fluid is of course of the highest importance.

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Fibrotic Type of Kidney Tuberculosis.—With a wholly negative previous history Potts' patient, aged 42, had a sudden attack of pain in the left kidney region which persisted for one week and ceased suddenly. The pain was not very severe, did not radiate along the course of the ureter and was not accompanied by vomiting or any disturbance of micturition. The patient remained well for the next six months and then had a similar attack, except that it lasted only twenty-four hours, but was more severe. During the first five months of this year she had similar mild attacks at intervals of from two to three weeks, lasting on an average about twenty-four hours. The roentgen-ray report was negative as was also the analysis of the urine. The kidney was exposed and removed. The kidney surface was studded with whitish nodules which were numerous in three sectors of the cortex, one at each pole and one in the center. Under the microscope these nodules were found to be fibrocellular in structure, with a few scattered and imperfectly developed giant cells, suggesting a fibrotic type of tuberculous infection, which is unusual in the kidney. Nodules of similar structure were also found in the kidney substance close up to the renal pelvis, but the nodules there were much fewer than in the cortex. The renal pelvis itself was not obviously involved. Sections stained by the Ziehl-Neelsen method failed to reveal tubercle bacilli. In Potts' opinion, the infection is tuberculous, but of a type rare in the kidney.

Middle Ear Infections in the New-Born.—Mahu and Chome report a case of otitis media in a new-born child infected during a prolonged delivery. The infection probably occurred during inspiration or a swelling movement. They emphasize Renaud's findings of otitis in every one of his seventy neropsies in infants. They recommend instillation of a few drops of an antiseptic in the nose, especially when delivery is prolonged in infected cases.

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ANNUAL MEETING, CRAB ORCHARD SPRINGS, SEPTEMBER 17, 18, 19, 20, 1923

COUNTY SOCIETY REPORTS

Barren: In the passing of Dr. W. T. Britt this society loses one of its very best members. He was one of the organizers and one of the charter members and a member of the first Board of Censors and continued an active member until his death.

While Dr. E. T. Ellison had not engaged in active practice for many years, he never lost interest in doctors and their affairs; was always the doctor's friend. Perhaps more people looked upon him as their personal friend than any other man in Glasgow. Needless to say, both will be greatly missed by both doctors and laity.

Someone has compared life to waiting in the ante room of the Great Physician. From this viewpoint then, the time has merely come when they have been invited inside his Private Office for consultation and as they passed inside they must have waved to their friends and said, "So long! We'll see you later."

The County Medical Society

There is much discussion in these latter days relative to County Societies. The entrance requirements of medical college having been raised to such a high standard make it impossible for a young man without considerable financial backing to enter, thus rapidly decreasing the number of physicians in rural counties. It seems that the county medical societies, except in the more densely populated counties, is headed for innocuous desuetude. While this appears to be the inevitable, yet, the writer sees no need for the immediate demise of the Barren County Medical Society. There are now twenty active practitioners in the County, from the standpoint of native ability, training and experience, comparing favorably with a like number in any other county of the state. With this number and type of men there can be but one reason for the present lethargic state of its society—lack of interest.

The Program Committee is working hard to revive this interest. It is their wish that every physician in the county become not only a paying member, but an active working member. This is your society; its deliberations are yours. It needs your presence and your help. It needs to have you express your opinions based on your own personal experience. It matters little to the people of Barren County, whose servants we are, how the Big Doctors in the Big Cities treat an epidemic of influenza, or measles, or pneumonia. What they are vitally interested in is what measures will her own doctors apply in these emergencies. Speaking of "Big Doctors," have you not observed that as a rule they vary in size inversely to the distance; that is to say, the closer you approach them, the more you know of and about them, the smaller they become?

After all, we are all just men, differing in our methods and reputations mainly by virtue of our environments and our ability as a propogandist. And none of us whether in city or country, have any corner on knowledge. So then, if you have a cure or a remedy that has proven helpful in your hands in combating cancer, pneumonia, or any other of the chest diseases pray do not keep it a secret from the rest of us; but come to the society meetings and get right up and in your own way tell about it. If it proves worthless in the hands of other men, you have lost nothing; you merely join the masses who have lived and wrought in all climes and ages, for nobody thus far has offered anything of real value; and if perchance, it should prove a cure, then you will have rendered to humanity an inestimable service and will strike hands with the immortal. And why not? Stranger things have happened. Was it not a frontiersman in the wilds of Kentucky who did the first ovariotomy?

The committee is going to ask you to write a paper in the near future and it will not take "NO" for an answer.

The regular meeting of the Barren County Medical Society was held in Glasgow February 21, 1923. The meeting was called to order by Vice President, Clifton Richards, in the absence of the President.

Minutes of the last meeting were read by Secretary. Also, a letter from the Secretary of the State Medical Association concerning the organization of indemnity insurance against malpractice. The question was put before the meeting; Dr. C. C. Howard made motion that the Secretary be written that the members of the Society, after discussing the matter, were undecided about taking the insurance. They think it is still in the experimental stage and prefer to watch it for a time. Dr. Richey seconded the motion and the meeting was unanimously in favor of letting the matter rest at that.

Resolutions concerning the deaths of Dr. E. T. Ellison and Dr. W. T. Britt were read and adopted by unanimous vote.

C. W. Froedge's paper on Influenza was read by the Secretary, and the following is some of the best points in the paper:

This is a disorder of the general system occurring epidemically, often falling "upon the people" very extensively. It is marked by chilliness, fever, general pains, frontal headache, with depression of feeling and strength, with a catarrhal congestion and morbid secretion of the mucous membrane of the upper air passages. The disease is often accompanied by inflammation of the lung substance, the pleura, the mucous membrane of the stomach and bowels and other parts of the body. Three varieties have been observed, viz; Thoracic, Cerebral, and Abdominal. The Italians named the disease Influenza and thought it was produced by some influence from the stars. But it originates in the atmosphere and spreads rapidly over the country and is one of the most contagious of diseases.

Although the facts of its prevalence indicate a poison as its cause we do not know what that poison is, nor the special condition its production. We have learned that its severity varies in different epidemics. Its seizures are not determined by age or sex. It proves more fatal to the old persons and young children and those debilitated by previous disease.

Influenza is distinguished from a cold by more severe general symptoms, by its epidemic prevalence, by greater fever, by greater subnormal temperature and greater depression. It is seldom alarmingly severe and perhaps never proves fatal unless there be more than ordinary complications such as Uremia, Pneumonia, or Tuberculosis.

After a correct diagnosis, the next important question to be considered is the treatment, and of course this varies according to the symptoms. All cases that need treatment should be confined to a warm, well ventilated room, kept comfortable day and night. The bowels should be kept active with saline cathartics. When there are accumulations of mucus in the lungs, especially in children, causing rattling in the chest and obstructed breathing Ipecac is of great service. If there is much pain or restlessness, Morphine and Paregoric are indicated. Dover's powders and Quinine are indicated in some cases. If there is a tight, hard cough Muriate of Ammonia, syrup of Squills and Tartar Emetic are indicated. If there is a great loss of strength and appetite Strychnin and the bitter tonics are of valuable service.

The patient should have a light palatable nourishing diet with oranges, lemons, and apples. The patient should stay in room until appetite and strength are restored.

DISCUSSIONS

C. C. Turner: I appreciate very much Dr. Froedge's co-operation in this work. His paper came in to us promptly after the last meeting. Just at this point let me say that while the doctors are co-operating most splendidly with us when you take into consideration the recent epidemic and the condition of the roads; yet, we want to insist upon even better co-operation. We want to insist that you fill out these blank reports for cases and send them into us. All the doctors in the county have paid their dues to the State Association except two and one of these is a very old man. Next summer when the roads are in better condition we expect to have some splendid meetings; but right now is the time to begin to prepare for those meetings.

There is not much to be added to or taken away from the treatment of Influenza as has already been outlined. When it comes to the treatment of Influenza one doctor's treatment is

about as good as another's. There is not much to do except to make the patient comfortable. What we do for the influenza patient now we have done for ages. The big thing, to my mind, is rest in bed. It is all right to give them purgatives as it is with most other diseases. I always give them a mild laxative. You can use serums if you care to. Whatever else you do put them to bed; and unless, as Dr. Froedge has already stated, there are more than the usual complications, most of these patients will get well.

Lee E. Botts read a paper on Influenza which was sent to the Journal for publication. This paper was discussed by L. Richey, C. C. Howard, Clifton Richards, C. G. Depp, A. T. Botts, and C. C. Turner.

The following resolutions were adopted at the meeting of the Barren County Medical Society on Feb. 21st, 1923.

WHEREAS: Divine Providence has called across the great Divide the soul of our friend, Dr. E. T. Ellison, and

WHEREAS: There has thereby been removed from the business and professional life of Glasgow a true councillor and the family has sustained the loss of a devoted, kind, and loving husband and father,

THEREFORE, BE IT RESOLVED by the Barren County Medical Society, in session, that these resolutions of sympathy be adopted unanimously and a copy of the same be forwarded to the family and entered on the minutes of the society and published in each county paper.

CLIFTON RICHARDS.
C. W. FROEDGE,
A. T. BOTTS.

WHEREAS: God in his infinite wisdom has seen fit to remove from our midst, our co-worker and beloved friend, Dr. W. T. Britt, and

WHEREAS: Thereby the medical profession of Barren County is deprived of one of its most valuable members and the public of a conscienious physician, faithful in the discharge of his duty in relieving suffering humanity; and his family of a devoted, loving husband and father;

THEREFORE, BE IT RESOLVED: by the Barren County Medical Society, in session, that these resolutions be passed unanimously, and a copy of the same be presented to the family of the deceased, and entered on the minutes of this society, and published in each county paper.

Committee:
CLIFTON RICHARDS.
C. W. FROEDGE.
A. T. BOTTS.

There being no further business the Society adjourned.

C. C. TURNER, Secretary.

Carlisle: The Carlisle County Medical Society met in the office of Dr. J. F. Dunn, Arlington, March 6th, 1923 at 4:30 p. m.

The weather and roads were extremely bad, consequently our attendance was small. Those present were: R. T. Hocker, J. F. Dunn, Arlington, G. W. Payne, H. T. Crouch and T. J. Marshall, Bardwell.

In the absence of both the President and Vice President, Dr. Dunn was elected president, protem. Dr. Hocker delivered the invocation, after which the committee on arrangements reported.

After the reading of the minutes of last meeting the regular program was taken up.

G. W. Payne read a paper on Trachoma which will be published in the Journal.

H. T. Crouch opened the discussion, calling attention to the prevalence of Trachoma in our State. T. J. Marshall, R. T. Hocker and J. F. Dunn also discussed the paper.

All the other essayists being absent; there were several interesting cases reported by the members present.

The Society adjourned to meet in Cunningham the first Tuesday in June.

Dr. Hazel P. Mosby, of Rockford, Ill., son of Dr. Wm. L. Mosby and wife, are visiting his parents and friends in Bardwell, while convalescening from a recent rectal operation. Dr. Hazel P. Mosby is connected with the Rockford Clinic.

T. J. MARSHALL, Secretary.

Christian: The Christian County Medical Society, met in regular session Tuesday, March 20th, promptly at noon at the Hotel Latham, Hopkinsville, with the following members present. Drs. Barnes, Gaither, Rice, Bell, Harned, Watts, Gary, Wright, Sargent, Perkins, Dade, Haynes, Reynolds, Stites, Caudle and Sandbach.

After a delightful dinner was served at the hotel we retired to the Public Library where the meeting was called promptly at 1:00 p. m. President Barnes in the chair.

The minutes of the last meeting were read and approved and the Secretary read several letters fro mthe A. M. A. Journal and at least ten subscriptions for the "Hygeia" was ordered, to be distributed as the secretary orders among the High Schools of the county.

F. M. Stites read an excellent paper on Medical Ethics.

T. W. Perkins read a well prepared paper on Pulmonary Abscess.

After quite a lengthy discussion by Drs. Gaither, Bell, Harned, Sargent, Reynolds, Caudle Barnes and Sandbach and being closed by Drs. Stites and Perkins we adjourned.

O. L. BARNES, President.
W. S. SANDBACH, Secretary.

Harrison: Harrison County Medical Society met in regular session February 5, 1923, at the Harrison Memorial Hospital. N. W. Moore, Wells, McIlvain, McDowell, Rees, Wood and Martin present. N. W. Moore, vice president, president. Josephus Martin was elected to act as secretary in the absence of the regular secretary, W. B. Moore, who is suffering from sinus trouble.

Charges were preferred against Drs. J. F. Morgan and G. A. Beckett on account of unprofessional and unethical conduct in operating and using in their practice an "Abrams Machine" which is known to be a humbug and colossal fake. Charges referred to Board of Censors, Drs. McDowell, McIlvain, and Swinford, with instructions to investigate and report at the next regular meeting.

R. W. Wood presented a case of compound fracture of lower third of leg, both bones, in a man 52 years of age. Fracture sustained several months ago, doing very well.

J. E. Wells read a paper on "Fracture of Elbow in Children, Dr. Wells showing drawings and demonstrating on skeleton.

N. W. Moore presented some x-ray plates along same line.

On March 5th, society again met in regular session, Dr. Carr, president, in the chair. The following members were present: Drs. Carr, N. W. Moore, Wells, McIlvain, Petty, Wyles, Rees, McDowell, and Martin.

Minutes of the last meeting approved as read. Censors given until next meeting to report.

A communication from Dr. A. T. McCormack, Secretary State Society, with reference to "Illegal Dispensation of Narcotics" was read and discussed.

Each member present paid $5.00 dues for 1923.

Mr. McDowell reported a case of pneumothorax in a man suffering with pulmonary tuberculosis, patient lived ten days after rupture.

E. S. McElvain reported a case of retropharangeal abscess following an infected tonsil.

J. M. Rees reported a case of pyonephritis in a child of thirty months, following probably influenza six weeks previously.

Pursuant to adjournment this society met on March 19th, 1923. Drs. W. B. Moore, N. W. Moore, Wells, McIlvain, McDowell, Swinford, Rees and Martin present. Dr. Wells acted as chairman. Minutes of last meeting approved as read. Censors reported as follows:

To the Harrison County Medical Society:

Your Board of Censors beg leave to report that the charges against Drs. J. F. Morgan and G. A. Beckett referred to us at the last regular meeting, February 5th, are sustained.

These doctors, in our opinion are guilty of unethical practice, and we recommend that they be expelled from membership in this society.

E. S. McILVAIN,
M. McDOWELL,
C. L. SWINFORD,
Censors.

On motion and second a vote by ballot was taken. Eight votes were recorded in favor of sustaining the report of censors. Noes-none. Drs. Beckett and Morgan were therefore expelled from the Harrison County Medical Society. The Secretary was instructed to so notify them.

JOSEPHUS MARTIN, Secretary, Protem.

Daviess: The Daviess County Medical Society met at the City Hall on March 21, with 21 members in attendance.

A communication from Dr. A. T. McCormack in regard to the use of opium and its derivatives was read and discussed.

Miss Robitaille of Louisville, made a very interesting talk on the Sheperd-Towner Law. Her explanation was very well received and the society promised to assist in the move.

The committee appointed at last meeting to investigate and report why the state dues were raised again last year declared they had no report to make, but moved that the resolution be laid on the table and the committee be discharged, seconded and carried.

The mover of the resolution apologized for making it said it was done hurriedly, without due thought, and was liable to create discord in the society which should be avoided by all means.

A resolution was then made requesting the state secretary to notify each county society of any important business that might come up at the next meeting of the state society, so the societies could instruct their delegates how to vote on such charges. Carried.

J. D. Stewart read and talked very interestingly on Pellagra and its Treatment. His paper was appreciated very much, and discussed by most of the members.

J. J. RODMAN, Secretary.

Bourbon: The Bourbon County Medical Society held its regular meeting on Thursday evening, March 15, 1923 at 8:00 p. m. at the Court House.

Thos. Marks, of Lexington read a paper on "Treatment of Diphtheria," which was freely discussed.

B. F. Van Meter read a paper entitled "Intestinal Obstruction." The discussion was opened by J. A. Orr, C. G. Daugherty, and M. J. Stern, and in closing by the essayist.

M. J. STERN, Secretary.

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EDITORIAL

THE CRAB ORCHARD MEETING.

Under the heading of Official Announcements Drs. Boyd and Jackson, of the Committee on Scientific Work, submit their suggestions for the Scientific Program.

It is hoped that the members of the Association will read this program with discriminating interest immediately and will write to the Secretary, volunteering to write papers on the various subjects. Within thirty days after this issue of the Journal appears, all of the subjects will be assigned. In so far as it is possible, preference will be given to those who have not heretofore appeared on the program, or who have appeared at intervals, rather than to the war horses who are always ready to work whenever they are called upon. Please write the Secretary as soon as you read this subject program if you desire to write a paper or if you think any of the subjects could be best handled by any of your members of your County Society, or your neighbors.

The profession will be interested in knowing that the management of the Crab Orchard Springs Hotel have been spending several thousand dollars in its improvement with a special view to this meeting. There will be ample accommodations for all the members and their families. The drive from Louisville to Crab Orchard Springs is over good roads and members from the Western part of the State who desire to drive through can go via Bardstown or Lebanon and have practically all good roads from these places east. Especial arrangements are being made for the entertainment of members of families and visitors so as to make the stay at Crab Orchard a memorable one. This is the ideal place of meeting in Eastern Kentucky and this splendid health resort will be open the year around for the entertainment of visitors.

It is important for the members of the Kentucky State Medical Association to realize that these meetings belong to them; that they are of interest just in proportion as each member takes an interest, and that scientific progress in the practice of medicine in Kentucky is measured practically by the character of each of these annual meetings.

THE HEALTH EXPOSITION

The Health Exposition in Louisville was an unqualified success—186,000 people attended it. The financial income was sufficient to barely pay its expenses.

Especially noteworthy was the scientific exhibit of the University of Louisville. The faculty visualized modern scientific progress in medicine and put on demonstrations which, in great detail, showed those who studied them what modern medical education is. The largest groups of interested people were constantly around the twenty-four booths of this exhibit and the members of the faculty and students deserve the highest praise for their splendid practical demonstration.

The Child Hygiene Conference, which was promoted by the Louisville Herald in one of the most remarkable publicity campaigns that has ever been conducted by a newspaper in the State, was also unbelievably successful. More than 3500 babies between the ages of 6 months and 3 years were brought to the Exposition by their mothers and received a careful, painstaking, complete physical examination, after which each mother had an opportunity for at least 15 minutes personal conference on her own and her baby's needs with baby experts. This tremendous mass demonstration of health supervision of mothers and babies was the biggest one that has ever been put on in any city in the United States. It demonstrated *en masse* what the family physician can do individually in prenatal supervision and in the supervision of babyhood and childhood from the standpoint of the modern practice of medicine. We are emerging from the period when physicians were called in to see sick mothers and babies after disease had developed into the far happier and more successful period when the physician and nurse will be constantly advising mothers and babies as to health habits so that most of the diseases they now suffer from will be avoided. It was interesting that in these examinations practically every member of the Jefferson County Medical Society enthusiastically participated. They were aided by more than 200 physicians from the State, practically every county being represented amongst the examiners. Each examining physician had the assistance of a nurse and a clerk. Such a combination demonstrat-

ed that they were able to do far more work than can be done by the doctor alone and a great many men said that they proposed to organize their offices so they could do this larger work for their people and because it would not only improve the public health but would increase their income so as to make it worth while. Such team-work pays. The demonstration in Louisville in the past year that the average death rate in babies of under one year of 81 to the thousand births could be reduced in a group which included one-sixth of all the babies in this age-group to 17, by the co-operation with the physicians of the public health nurses, is one of the most striking demonstrations of the efficacy of modern medicine.

In a similar way during the evenings of the Exposition, there was a demonstration of the physical examination of the well. Interest in this was stimulated by the splendid co-operation of the Courier Journal in its generous attempt to find the physically perfect younger women of the State, one of whom was to assume the diadem of Hygeia in the great Pageant which marked the close of the Exposition. While this was not so well organized as the Baby Health Conference, a large number of adults received a more or less complete health examination and the physicians who participated in it crossed the vision of what it would mean in the future when such systematic examination of the apparently well becomes universal. This is the most important development in modern medicine. The wide-awake physician who adopts it and uses it in his practice will be the one who will merit the greatest public confidence.

Both of these systematic physical examinations of babies and adults especially emphasize health habits. Prizes were awarded to those because they were healthy because they had so conducted their lives that they ought to be healthy; for example, babies who were put to bed later than 6:30 were not considered in the awarding of prizes.

The Louisville Times, co-operating with the shoe men of Louisville, offered a prize for perfect feet. It was of special interest that the most perfect feet were those of an athletic young woman who wore sensible shoes that were well fitted. The second prize in this contest was awarded to a young Japanese public health nurse who has been working in the Pine Mountain Settlement School and whose feet had been formed in the loose fitting Japanese shoes. It is important for both our men and women to know that the high-heeled, pointed shoes deform our people's feet to a lesser degree, but in the same proportion, as the tight-binding Chinese shoes.

The Louisville Post, co-operating with the architects of Louisville, offered prizes aggregating $1000 for the best and most economical plans for small homes. The publication of the results of this contest will be of tremendous value to every town in Kentucky. Plans were submitted showing that convenient, comfortable, healthy homes may be built at small expense, occupying very little ground and can at the same time be artistic and attractive rather than the barrel and box houses so universally used both in the industrial additions to our cities and tenant houses in the country.

Especially noteworthy in this Exposition was the great improvement over last year in the character of the lectures and demonstrations in the various booths. Every participant was trying to put over lessons which, when learned by his hearers, meant increased health and happiness. The commercial firms, especially, which had demonstrations were very enthusiastic over the different psychology of salesmanship which developed in their demonstrators because they were educating the public as to the use of their wares rather than merely selling them.

The medical profession of Louisville and the State will remember gratefully those who participated in the Exposition so as to make it such a tremendous success, and they should not be forgetful of the numerous large firms which have lived on public patronage, which were so selfish or short-sighted as not to assist in this tremendous movement for public health.

The National Health Exposition in Louisville in 1923 was the greatest event which has ever happened in its health and medical history and the 11,000 participants in the Exposition earned and are entitled to the gratitude of the people of the City, State and Nation.

SCIENTIFIC EDITORIAL

THE OPTICIANS AND THE OCULIST

In 1919 the Opticians of Great Britain through the British Optical Association, introduced a bill in Parliament which would legally recognize their cult for the purpose of fitting glasses. It has come to the notice of the Journal that the Council of the British Ophthalmological Association, after a prolonged consideration of this question, has just decided to enlist the interest of the lay-public, whose welfare is directly concerned, in defeating any further efforts on the part of the opticians to be legally recognized in England.

Appended to the report of the Council published in the British Journal of Ophthalmology of December 1922, we find an interesting

resume of the history of the art of refraction. It seems that in the earlier days of spectacles, following the introduction of the use of the convex lenses for reading and other close work by Roger Bacon in the 13th century, the making of lenses was largely in the hands of the Monks. Up to the 19th century the prescribing of glasses was done empirically when, largely through the efforts of Young of England, Helmholz of Germany, and Donders of Holland, the adjustment of lenses to the eyes for the improvement of vision, for the alleviation of reflex symptoms and for the treatment of squint developed into a science which has since been largely in the hands of the physician. The Council of British Ophthalmological Association makes the plea that these responsibilities be not allowed to pass into the hands of the Optician who has no knowledge of the intricate make-up of the eye and who has no medical training. The Council also expresses the belief that no course of training short of that required for full medical qualifications can produce the skill and judgment necessary to determine the kind of glasses required to compensate for defects of vision and to determine whether defects in vision are entirely due to the need of glasses or to disease within the eyes or to constitutional disease with secondary manifestations of the eyes. While we agree fully in that untold harm may result in the promiscuous prescribing of glasses by the optician, who, if he has insufficient knowledge of the anatomy and physiology of the eye, must necessarily view the organ as a mechanical apparatus and who therefore is a sight tester (optometrist), too frequently unable to discriminate between sick and healthy eyes, yet we are forced to admit that we are unable to solve the question of supply and demand on the part of the glass-wearing public. The Council of the British Ophthalmological Association in its report does not offer a substitute for the "Sight-testing optician" hence the assumption that the oculists of England can cope with the problem and serve all of her subjects in need of glasses is possibly justifiable. However, we feel impelled to believe that the number of physicians practicing ophthalmology in the United States would be entirely inadequate to the demands of the people in the event that all of the cases in need of glasses were to apply to the oculist for examination, hence there is not only a place for the refracting optician but that such development should be encouraged, as will establish it as a definite profession. At present we have two kinds of opticians: the one who examines the eyes and furnishes glasses, who in recent years is known as the optometrist—the other, who stands in relation to the oculist as the druggist does to the prescribing physician and who devotes his attention to the filling of oculist's prescriptions and the proper adjustment of frames. This relation, if strictly adhered to, would be an ideal one and the optician who would thus co-operate should receive the encouragement and support of the oculist as well as of the general public. Unfortunately it is a very rare exception to find an optical company that conducts its business strictly on these principles as the great majority of them essay to "fit glasses" whenever the opportunity presents. Regarding the optometrist, it is a reasonable assumption that the harm done by his inability to discriminate between diseased eyes and those merely in need of glasses will be reduced to a minimum as rapidly as the optometrist himself demands and enforces a higher standard of education in optics. Through Kentucky's new drugless law, enacted in 1920, the optometrists are represented on the State Board of Medical Examiners by three members chosen from the membership of the Kentucky Association of Optometrists who assist the Board by preparing questions and grading papers involving the principles and practice of optometry. By making these examinations thorough, with the purpose of licensing only those fit for the work, all of the harmful abuse of the privilege accorded the optician will be gradually eliminated.

Since the optometrists have become registered in Kentucky it is gratifying to note that they have organized a scientific body in order to perfect their art and to impress upon their members the opportunities and limitations of their practice. In this development they will have the active aid of the ophthalmologists of Kentucky.

Unfortunately there has existed a certain amount of antagonism between the optician and the oculist which should not exist. The sooner the oculist ceases to place all prescribing opticians in the category of the few who, through lack of application and ignorance, are a menace to the public welfare, and the sooner the optician realizes his limitations and learns to recognize the superior knowledge of the oculist as regards the eye and its condition by virtue of the years of study devoted to ophthalmology, the better for everyone concerned. There is no reason why a better feeling should not exist between the oculist and the prescribing optician; why meetings of the optician's societies should not be addressed by oculists in an endeavour to clear up those points where the optician is liable to serious mistakes by his failure to recognize symptoms and why a general co-operation should not be encouraged.

A. O. Peingst.

OFFICIAL ANNOUNCEMENTS

TENTATIVE PROGRAM OF THE KENTUCKY STATE MEDICAL ASSOCIATION

SUGGESTED SUBJECTS

Surgery of the Prostate.

Possibilities and Limitations of Radiology in Malignancy.

Cardiac Disease in Childhood.

Diagnosis and Treatment of Chronic Joint Infections.

Present Status of the Treatment of Syphilis.

Recognition of some of the Common Affections of the Endocrine Glands.

Present Status of Gall Bladder Surgery.

Complication and Sequellae of Typhoid Fever.

Some Diseases of the Eye which are of interest to all Physicians.

Pyrexias of Obscure Origin in Childhood.

A Consideration of the so-called Primary Anemias.

Blood Chemistry in Diagnosis and Prognosis.

Management of the Ruptured Appendix.

Diagnosis and Surgical Treatment of Carcinoma of the Rectum.

Diagnosis of the Chronic Dyspeptic.

Foci of Infection above the Collar Bone and Importance of their Early Recognition.

Acute Injuries of the Brain with Special Reference to Treatment.

Focal Infections from the viewpoint of the Internist.

Management of Stone in Urinary Tract.

Radiation of Fibroid Tumors.

The Problem of the Bleeding Uterus.

The Treatment of Chronic Malaria.

Diagnosis and Treatment of Acute Osteo-Myelitis.

The Treatment of Puerperal Infection.

Surgical Disease of the Spleen.

Management of the Bottle Fed Baby.

Recent Advance in Treatment of Diabetes.

Systematic Physical Examination of the well, Responsibility and Opportunity.

Eclampsia a Preventable Disease, How and Why.

Infant Mortality—What the Physician can do to reduce it.

Kentucky Crippled Children's Problem.

Should the Control of Boards of Health be political or professional.

The Venereal Problem, Why report Venereal Diseases.

ORIGINAL ARTICLES

INTESTINAL OBSTRUCTION.*

By H. T. RIVERS, Paducah

Any part of the intestinal tract may be obstructed. The obstruction may be acute, subacute or chronic, complete or partial, due to a multitude of causes; i.e., intussusception, volvulus, foreign bodies, enteroliths, intestinal parasites, adhesions, twists, kinks, congenital defects, tumors, malignant or benign, etc.

In acute cases the interval between the onset of the symptoms and the operation is the factor of importance. Statistics from some of the largest hospitals show that the mortality rate is five per cent for the cases operated within the first twelve hours, eleven per cent in those operated within the second twelve hours, and thirty per cent upon those operated the second twenty-four hours. This mortality rate should be taken with a large grain of salt, for we must consider the cause and condition at time of operation. However, we do know that the time of operation does cut a big figure in the death rate, the cause necessitating the operation, and the range of operating procedure to be considered in our prognosis.

The gravity of intestinal obstruction is due to the following factors: Absorption of the products of the chemical changes that take place within the intestines, the arrest of the fecal current, interference with the circulation in the affected gut. We believe that the first mentioned, i.e., absorption of the products of chemical change is the prime factor in the familiar train of symptoms of nausea, vomiting, dehydration, shock, with bleeding into the splanchnic area, that the arrest of the fecal current and the interference with blood supply should be considered only as a cause that allows the first mentioned to develop.

Stone, in his experiments with dogs, found that when the toxic material was removed from the obstructed intestine and injected into normal dogs that they died with the symptoms that were noted when the intestine was obstructed.

Ellis states that the mortality of high intestinal obstruction is from fifty to sixty per cent, is due to toxemia, bacteremia, shock, etc. That the toxic material can be isolated and is identical with the toxine found in portal obstruction, and in animals whose adrenals had been removed.

The determining factors are the character of the vomitus, the failure of enemas and other means to relieve the vomiting or secure

*Read before the Kentucky State Medical Association, Paducah, October 16, 17, 18, 19, 1922.

bowel movements and relief of the tympanitis. An increase in pulse rate, anxious expression, and an intolerable thirst, shock, which ordinarily comes on late. Distention is a symptom which depends upon the location of the obstruction. In low obstruction it is late in manifesting itself and is ordinarily pronounced; while in those located high up in the small intestine the amount of distention is slight and is noticed early.

Finney draws the following conclusions: (1) Difficulty in making an early diagnosis may be experienced, especially in post-operative cases; (2) A positive diagnosis is not necessary before operating measures are begun; (3) Early diagnosis is the most important factor of all. It is more important to perform the operation earlier than well; better a poor operation on a patient in good condition than a good operation on a patient in poor condition.

TREATMENT

Treatment is dependent upon the condition encountered, and the condition of the patient at the time of operation. In late cases, profoundly toxic, the gentler your manipulation the greater your percentage of recoveries. Mayo advises in moribund cases that our endeavors be limited to drainage. In post-operative cases that required drainage for more than 24 hours, it has been our procedure to enter the abdomen from another opening believing that by so doing we are better able to protect the peritoneal cavity.

It has been only a few years since the program of any medical society would contain from one to half a dozen papers on appendicitis, with the result that we today can see the result of this educational campaign. We know that the appendicitis cases reach the operating table hours earlier than they did five years ago. The same procedure will apply to intestinal obstruction or any surgical condition. The laity are willing and anxious to learn, it is up to the medical profession to supply the material for this educational propaganda.

Case No. 1.—J. S., female, aged 15, admitted to hospital on July 20, 1922. This patient seen six weeks prior to entrance, a tentative diagnosis of peritonitis, probably of appendical origin, operative interference was refused by family.

At time of entry pulse 136, temperature 100, intense nausea and vomiting, abdomen distended moderately, unable to secure bowel movement. Gave history that recovery from prior attack had not been complete, some pain in abdomen, and required purgatives to secure bowel movements. Present condition began three days prior to admission, during which time had been treated heroically with purgatives and enemas without result. Diagnosis intestinal obstruction, operated through median incision, found small intestine occluded by band, with numerous other bands. Patient's condition so bad that exploration of abdomen not warranted. Appendix normal, recovery good.

Case No. 2—L. P., male, aged 17. Operated June 1, appendiceal abscess. Three weeks duration. Drainage, post-operative history, stormy but satisfactory until seventh day, when he became nauseated and vomited several times. Unable to secure bowel movement. Cramping pains in abdomen. No flatus expelled, diagnosis post-operative obstruction. Internal abdomen through left rectus incision. Protected abdominal contents with gauze, found loop of small intestine kinked against abdominal wall at site of previous operation, established drainage through wound of first operation. Post-operative history uneventful, discharged in four weeks.

Case No. 3—T. M., male, age 3 months, history that at birth had umbilical hernia and right inguinal. Umbilical disappeared with treatment. The inguinal had increased in size, several times had required services of family physician to replace.

On admittance to hospital, temperature 100, pulse 144. Condition good. Found right scrotum size of baseball, very tense. Condition had existed for two days during which time bowels had moved once. No nausea or vomiting—under anesthesia unable to reduce the hernia. Diagnosis incarcerated hernia. Incision parallel with Poupart's ligament found ceacum and appendix in seretum. Appendix as large as in an adult. Tense, acutely inflamed. Recovery good, discharged on seventh day.

REPORT OF CASES OF INTESTINAL RESECTION.*

By E. S. Allen, Louisville

Defects in the continuity of the wall of the intestine demanding surgical repair may be the result of injury or disease.

The multiplicity of causes which may lead to such defects necessitates numerous variations in detail, and even in general principles in their operative treatment. Enterectomy is frequently indicated in injuries of the bowel, in gangrene of the gut as in hernia, in growths, strictures, fecal fistulae, embolism, thrombosis, intussusception, volvuli, tuberlosis disease and inflammatory conditions.

I shall not burden you with a detailed account of the merits of the different stitches, as advocated by Halsted, Czerny, Connell, Turck and numerous others, nor of the different mechanical devices, which are probably most-

*Read before the Kentucky State Medical Association, Paducah, October 16, 17, 18, 19, 1922.

ly used when they contribute additional speed to the opration.

Successful intestinal suturing is more dependent on an even opposition of serous surfaces, which are to be held by sutures, without leakage to infect them, until they become adherent, and the adhesions organized, than upon the manner in which the suture is applied. The closure of the wound should be water tight, whatever method is used. Time and technic are greater factors than the method of suture. No field in surgery has received experimentally so much effort, especially on the lower animals as intestinal suturing, and yet the last word has not been written. Writers lend their endorsement to this or that suture without offering plausible argument for their preference, other than a certain amount of success, has attended its employment in their hands. (Halsted) "who knows for instance how much of the intestinal wall should be turned in, whether two rows of stitches are better than one, whether the suture should be continuous or interrupted, or whether the Lembert or mattress stitch is preferable. If knots should be on the mucous or peritoneal surface." I doubt if there exists a surgeon who has not tried these various sutures and methods, at least on animals, and with a certain measure of success, and in his mind it is not so much the method as to the perfect application of method. In fact very little new has been added to intestinal suture. Halsted, of John Hopkins, has advocated what he calls the blind end suture, the effect of which is to eliminate leakage and infection, the chief causes of disaster in resection. Having operated on 47 dogs by this method without a fatality and without symptoms indicative of an abnormal convalescence, he says, "for the first time in the history of intestinal sutures, infection is as minor a factor as in the interim appendix."

In operations on the human intestine the surgeon's only criterion has been the mortality; for one cannot explore the abdomen in order to determine the amount of reaction about the line of suture, the fate of the stitches, the depth of the inturn, the delay in its unfolding, etc.

There is no field in surgery where time and technic play such factors. The susceptibility of the patient to shock and infection, necessitates a constant guard against soiling of the peritoneal cavity primarily, or a secondary leakage as a result of eversion of the mucous membranes or an imperfect inversion of the mesenteric border, or that some point of a running stitch may have been too loose or too tight, or that a peritoneal stitch has perforated the mucosa.

The more perfect the execution of any method of anastomosis, the less reaction about the line of suture and the greater the rapidity of complete restoration of the lumen of the bowel. Both lateral and end to end anastomosis have their weak points. It has been demonstrated (Harsely) that in lateral anastomosis, peristalsis in the region of the anastomosis is practically abolished, and food can be pushed through the anastomatic opening only when a column of it extends into a proximal loop, where peristalsis is unimpaired. This is true because severing the circular muscular fibres in lateral anastomosis abolishes peristalsis in that region and the blind pouches at the ends cannot be completely emptied. This is not true in an end to end union.

The chief objection to an end to end union of the intestine has been that the suture line is likely to leak at the mesenteric junction of the bowel, or at a point opposite to this where the nutrition is poor. The triangular space where the mesentery splits to envelop the bowel is considered responsible for most of the failures of an end to end union of the intestine, because it is devoid of peritoneum, and is infected when the lumen of the bowel is opened. The bowel is cut from the free border toward the mesentery, necessarily carrying the contents of the bowel into this space, because the blades of the scissors that cut through the lumen of the bowel must be contaminated with fecal contents and will smear bacteria into this space. An incised wound of the skin smeared with fecal content and sutured, will certainly break down. For the same reason, leakage occurs in the triangular mesenteric space. Another point of leakage is opposite the mesenteric border, where nutrition is poorest, and trauma more devitalizing. Though infection is practically eliminated in Halsted's blind end suture, yet in an end to end union a great many bacteria can be removed by cleansing the ends of the bowel just as we do the skin. The skin cannot be sterilized but a great many bacteria can be removed so with the bowel and the needle and thread will not carry the infection as if the bowel end of the bowel had simply been squeezed out.

(Horsely) Infection in the triangular mesenteric space is lessened by a technic developed by Horsely. "The loop containing the diseased bowel is clamped and emptied as far as possible. The mesentery is divided close to the bowel and the triangular space at the bowel is clamped and tied. Moist gauze is packed under the loop and after clamping the loop at the proposed point of resection, the bowel is cut somewhat obliquely from the mestentery outward. The bowel ends are

cleansed and united beginning with a mattress suture, continued back and forth across the mesenteric portion until about one third of the circumference of the intestine has been sutured, when the needle is brought through from the lumen of the bowel to the peritoneal surface, and a back stitch is taken and the rest of the union is completed with a continuous suture.

It is admitted that enterectomy is only to be resorted to when absolutely necessary. If a perforation can be sutured without compromising the gut lumen, or a stricture satisfactorily overcome by plastic operation, no doubt can exist as to the superiority of the more conservative method, although an excision may appear neater and a more workmanlike procedure. Cases necessitating resection are as a rule not good surgical risks, many of them are emergencies and have not had the pre-operative preparations. Often they are in shock from pain and loss of blood, or exhausted from toxaemia and emesis or as in obstruction they have had very little fluid and are dried out. They have no reserve energy. The most conservative temporary surgery under local anaesthesia, such as an enterostomy, is as much as the patient can stand. It frequently requires rare surgical judgment to estimate operative resistance and know just when to make a sponge count and close the abdomen. Many a desperate case has lived as a result of a two stage operation. Saving the patient's life and correcting the pathology later. Radical surgery, when the patient is in shock or is exhausted, too frequently results in disaster. To know when to quit is as essential as to know when to cut. These patients need a surgeon and not an operator. Abdominal surgery can only be learned by experience. Competency to deal with abdominal diseases necessitates an understanding of its pathology which can be best acquired by a long experience as assistant and student under a master of the subject. To open the abdomen for even the most trivial disease, may reveal complications, the handling of which would try the most skillful surgeon. Every abdominal disease is serious, and invasion of the peritoneal cavity should always be regarded as a major operation.

Having had an interesting series of intestinal pathologies requiring resection of portions of the bowel, I wish to report several of the most interesting ones:

Case 1. H. W. Male, white, age 46, shot with a 38 pistol. The bullet entering the abdomen opposite the umbilicus to the left of the rectus muscle. I saw this patient two hours after the injury. He was in collapse from loss of blood. Mucous membranes were blanched, pulse 160. He was given a hypodermic of morphine and atrophine, and placed on the operating table, a saline transfusion was started and the abdomen opened through a left rectus incision under a general anesthetic. The cavity was verily a lake of blood. A large vessel in the sigmoid had been severed, this was clamped and ligated. Three perforations in colon and three in the small intestine were closed. A fourth wound in the small gut had completely severed it. The traumatized edges were excised and an end to end anastomosis done. This patient had a stormy convalescence, as the cavity was thoroughly soiled with fecal matter, but recovered and is entirely well after a second operation for a sinus leading to a piece of clothing embedded behind the sigmoid.

Case 2. Strangulated inguinal hernia. Mr. Smith, age 72, gangrene of the small intestine. This patient was brought into the hospital at 3 A. M. after a drive of 35 miles in an automobile. His hernia had been down 3 days. You can imagine his condition. He was cold, a clammy sweat, rapid pulse and vomiting. He was wrapped in hot blankets and given 100 gr. atropine. Under local anaesthesia (novacaine) 1% the hernial region was opened and 8 feet of small intestine resected, and end to end anastomosis with catgut buried suture and silk peritoneal suture. A radical herniotomy was done. The following morning this patient got out of bed and walked across the room to get a drink of water. In three months he returned for a herniotomy on the opposite side, insisting that it be done under local anaesthesia.

Case 3. Mrs. G. age 75, strangulated femoral hernia, of 8 days standing, was brought to hospital Sunday afternoon Xmas week. She was too exhausted for general anaesthesia. Under 1% Novacain-adrenalin, the hernial sac was incised and to our dismay the sac was filled with feces. The gut had become gangrenous and liquifaction necrosis had taken place. Several ounces of feces were sponged out along with necrotic shreds of intestine. By incising the hernial ring the ends of the bowel were caught and pulled down, a tube introduced and sutured in each end. Quantities of fecal matter drained for three days. The patient's condition had improved to such an extent that we felt safe on the third day in opening the abdomen from above. A right rectus incision was made, the cavity was well protected with saline sponges and by clamping each gut near the tube, the ends of the gut were excised. The tubes were pulled out through the fermoral ring, and an end to end anastomosis done. There was not an interruption in this patient's convalescence. Mrs. G. 75th birthday

came between the two operations. She is entirely well 7 months after operation.

Case 4. Intussusception. Mrs. H. age 30, a mother of two days. I saw this patient 75 miles up in the State at 12 o'clock at night. She had pain and vomiting dating from a few hours after labor. A mass could be easily outlined, on account of the relaxed abdominal muscles following pregnancy. A diagnosis of intussusception was made, an operating table was improvised with two barrels and a plank. A cambric needle and spool of black thread was borrowed from the patient, as I found that I had no silk in my operating bag. The intussusception was in the ilium, caused by a Meckels diverticulum. She had not been given pituitrin. I found it impossible to reduce the intussusception so had to resect. A lateral anastomosis was done and just as I had completed the anastomosis, my assistant by mistake clamped the bowel with a heavy toothed forcep about two inches from the anastomosis, thinking that he was clamping the gut to be resected. A second resection was necessary, on account of time, an end to end union was done. This patient was in town shopping just three weeks after the operations. I resected 3 feet of the bowel. This patient came to my office a few months later and said she "wanted to see them guts I cut out of her."

Case 5. Mrs. B. age 34. Mass in right side. History of attack of appendicitis three years previous, complained of obstipation and pain in pelvis, sensitive masses were outlined in each tubal region. She had been practically an invalid for several years. Temperature 100, pulse 90, white count 10,000. She was advised to be operated for an appendicitis and pus tubes. A mid abdominal incision revealed a tubercular peritonitis involving principally the pelvis and its content, both tubes were very much involved along with the pareital peritoneum of pelvis. The mass in appendiceal region was perplexing as three small intestines apparently emptied into the cecum, a more thorough exposure demonstrated that two of the coils were sigmoid, and when dissected free from the cecum, it was found that a short circuit existed between the sigmoid and cecum. These openings were closed, an omental patch sutured over each closure. The T. B. tubes were not molested except to paint them with iodine.

In exploring the abdomen before closure, a rather long Meckels diverticula was found, which was dealt with as is the appendix, by ligation and inversion. I was impressed with the rather large mass the inverted stump made, but the lumen of the bowel did not appear to be infringed on very much, so the abdomen was closed. Just 8 days from operation after patient was getting solid food and had run a normal post operative course, she complained of intense abdominal pain, pulse rate which had been 80 was increased to 110. She was vomiting and abdomen was rigid, temp. 98, no result obtained from an enema. In rehearsing the operative field, I recalled the mass at point of inverted diverticula stump. I knew she had an intussusception. The patient was in such pain, that it required no persuasion to get her to the operating room. The abdomen was opened through a right rectus incision and we found an intussusception of about 10 inches, which was irreducible. A resection and end to end anastomosis was done. There was immediate relief and complete recovery. I might state that where I had painted the tubes with iodine that coils of small intestine had already adhered rather firmly.

Case 6. Mr. O. Age 28. Consulted me for mass in right side, apparently over cecum. Temp. 99, pulse 90. Leucocyte count 9,000. Red cells 56.000. Patient had suffered very little pain. Had difficulty in getting bowels to move. Bismuth meals was delayed in getting into colon. Mass appeared about size of a kidney. An exploration was advised, patient kept in hospital several days preparing intestinal tract. A right rectus incision under gas, ether anaesthesia revealed a large fixed mass involving the cecum and enfringing on iliocecal opening. The ilium was transplanted to ascending colon, and a resection of cecum and several inches of ascending colon was done. This patient made a perfect operative recovery, but returned in three months with mass in region of right kidney. X-Ray therapy was instituted in massive doses, with marked reduction in the growth and for several months we were encouraged as the mass was barely palpable. This patient died in 18 months following the operation.

Case 7. Briefly—Mrs. S. age 45, large abscess in mesentery of ilium, producing obstruction of bowels. The gut was black from inflammatory mesenteric thrombosis. The abscess was evacuated. The gangrenous gut brought into incision and fixed. A hot saline dressing applied. The following day some of the exposed intestine had regained its color, but about 4 inches was collapsed and had perforated. A tube was introduced and for 10 days a most disagreeable fecal discharge kept up. The patient, however, had recuperated, and under local anesthesia, without taking patient to operating room and without her knowledge. An end to end anastomosis was done, with complete recovery.

This patient lives in Louisville and does laundry work.

Summary

1. A careful application of any standard method of intestinal suture is more important than any special suture.
2. A detailed technic to avoid contamination.
3. Conservative surgery, such as interostomy frequently under local anaesthesia, until the storm is over, and then a radical correction of the pathology.

References:

Halsted——Annals of Surgery.
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DISCUSSION

Charles A. Vance, Lexington: I have been asked to discuss the paper of Dr. Rivers, which was a very clear, concise and practical paper, and I enjoyed listening to it very much. I think I can endorse everything he said about intestinal obstruction. I believe the causes, to which he attributed death from intestinal obstruction, were true, and in my experience the cases that we have tried to do too much for were the cases that died.

A very important factor is to operate on these patients as soon as possible after a diagnosis of intestinal obstruction is made. If we can get them early, operate on them quickly, and do just as little as possible to them, I believe we will get better results. If we cannot find the cause of the obstruction, we can drain above with a Pauls tube, let the acute symptoms subside, and afterward do whatever is necessary. I think in cases of partial intestinal obstruction, the diagnosis can be cleared up in many of them by the barium meal, x-ray examination, and sometimes by the barium enema.

I enjoyed both of these papers very much.

Frank Boyd, Paducah: I feel a little embarrassed about discussing these papers because some of my cases of intestinal obstruction have died, and I would like to have heard reports of some deaths. The essayists undoubtedly did not save all of their cases.

I cannot quite agree with Dr. Allen with reference to lateral anastomosis as compared with end-to-end anastomosis. Those of us who have been engaged in practice for a long time and have done these operations have had a number of cases of intestinal obstruction to contend with, but I want to say this, that my end-to-end anastomotic work has proven to be disappointing. I do not attribute that to the method of end-to-end anastomosis, but more to my own ability to get the same results that I do from side-to-side or lateral anastomosis. Nearly all the cases I have operated on with lateral anastomosis have gotten well and remained well, and never have had patients complain of interference with the peristaltic movements of the bowel. I have some patients living fifteen years after operation, and I have a number buried from end-to-end anastomosis. The latter method is an ideal one; I am not condemning end-to-end anastomosis because it is the ideal way to do it. I think all of us, if we do a thing well one way and learn how to do it, we are inclined to stick to it. I have almost discarded end-to-end anastomosis in intestinal work; I prefer to do side-to-side anastomosis. Recovery depends in direct ratio to the earliest time which you see the case and the time you get the case for operation. In those cases where you suspect obstruction, it is better to do an exploratory operation if you do not find the obstruction. I have explored some cases where there was no obstruction, and some cases have been explored in which I had some doubt in my mind about obstruction, and yet I found the obstruction. You should do the operation as quickly as you can and get the patient off the table as soon as possible. That is the proper procedure.

I have in mind one case on which I did four separate operations for intestinal obstruction covering a period of five years. I made a diagnosis of intestinal obstruction and did not wait for the family physician. She had an attack of peritonitis following the enpalement of a picket in her abdomen from a cyclone. She came in a hurry that time, and the obstruction was not severe. I did a complete cleaning out of the abdomen, removing innumerable bands, and since then I have had no more trouble with her.

I find in my work that I get cases of intussusception of the bowel rather late, especially in children. I think the physician in attending these little cases should always have in mind the fact that when a child begins to have tenesmus and straining, instead of saying the child has dysenteric trouble, it might have intussusception. Intussusception comes on slowly, and the symptoms of obstruction are not acute, and these cases are the ones where you are compelled to resect six inches of the intestine, whereas if an early diagnosis was made you would be saved this trouble and probably save the patient's life.

As to intestinal obstruction from hernia, I have had a few such cases in the past year, one in particular where a femoral hernia had been overlooked by the physician in charge. A femoral hernia had been present and the obstruction seemed to be very slow in taking place. The patient was able to retain various quantities of laxatives, and purgatives, so that the physician was in doubt whether he had obstruction or not. It was found the patient had a strangulated femoral hernia, but it was overlooked from the fact that the patient had a tumor in the groin for many years and the physician felt it could not be the cause of the obstruction.

John R. Wathen, Louisville: I do not believe we have had any more important papers presented before this meeting than the two just pre-

sented. They deal with a live subject and one that is of the utmost interest to us as surgeons. I take it, the essayists had in mind in presenting these papers mechanical obstruction of the small intestine principally, and from the reports of cases and general discussions I want to emphasize one or two points that were brought out, one of which is that the mortality in acute obstruction will depend largely on the time of operation. The mortality from the acute cases is in the neighborhood of 50 per cent., but this mortality can be materially reduced by operating on these cases early. It is a question of time more than anything else.

Another point: why do these patients die? They die not only from the absorption of toxic material, but they die from dehydration. If we can put enough water into them we overcome the toxemia, and we have at our command the greatest possible remedy for this purpose; at the same time, there comes up the question of relieving the obstruction with the least possible traumatism and shock. In these cases we should resort to nitrous oxid anesthesia or local anesthesia, with a rapid technic, bring the gut out, make an opening and drain it, do an anastomosis enterostomy and repair that later. You cannot do ideal work under these circumstances. The higher up the obstruction the greater the fatality.

One of the essayists spoke of having a water tight anastomosis. It is an air tight anastomosis we want, and that is especially true in the large intestine, and equally true in the small intestine. I cannot understand how in an acute obstruction one can advocate end-to-end anastomosis. I will admit end-to-end anastomosis in selected cases, where there are no special complications, is an ideal method, but for emergency work it is far safer and far quicker, and you are less liable to soil the peritoneal cavity, by doing a lateral anastomosis than an end-to-end anastomosis.

In speaking of the new operation of Dr. Halstead, it is an ideal one for selected cases, but it is not for the emergency case. It is not an operation to be recommended in an emergency case. In acute conditions the quickest work we can do and the safest work is the ideal work. Do not forget above all to counteract the dehyration.

Walter Hume, Louisville: I want to say a word or two in emphasis of the use of local anesthesia in these cases of intestinal obstruction. We are agreed on early diagnosis as being especially valuable in reducing the high mortality, and I think there is nothing in the way of handling these cases that we can do that will reduce the risk of patients so much as local anesthesia in doing the operation as advocated by Dr. Allen. He has been fortunate in saving all of the cases that he has reported. A general anesthetic will have quite an influence in reducing the patient's chances and in sending the patient off of the table in poor condition. One can insert a Paul's tube, but he may have sometimes a rather difficult time, with local alone, on account of extreme distention. Most of the time you can do it well under a local anesthetic, and it is part of the life-saving plan.

R. C. McChord, Lebanon: There are two points that have not been emphasized in this discussion so far in connection with intestinal obstruction. One point is, if you will notice, the distal end of the gut is collapsed and the proximal end is very much enlarged in obstruction.

Another thing in these emergency cases is the use of the Murphy button. We find these patients very frequently in extremis, and by opening the abdomen under local anesthesia and then using the Murphy button, we get through with the case much better than if we had made a more extensive operation.

J. G. Carpenter, Stanford: The early bird catches the worm. Early diagnosis is everything. When I began the practice of medicine opium and morphine were given to these patients and as a result the surgical symptoms were obscured, but since we have had the Harrison law less and less morphin has been given, and the surgeon has an opportunity of doing life-saving surgery at an early hour, say within the first twelve hours of the obstruction. If we operate that early, we are more likely to save lives.

Again, with Senn's hydrogne gas test, we can test out early and find where there is obstruction or not. We can use the same test as for gunshot wounds of the abdomen. With Senn's hydrogen gas test you have a method of determining whether there exists intestinal obstruction or not.

Guy Aud, Louisville: Dr. Allen's paper is a very valuable one in which I have been very much interested. Recently Dr. Charles Mayo has advocated doing enterostomy proxinal to the anaestamosis in order to relieve the intoxication and also prevent a blowout at the suture line. As Dr. Wathen says, these patients die either of intoxication and dehydration, or from leakage. The enterostomy will in many instances relieve both of these conditions. It will relieve the intoxication by allowing drainage, and on the other hand, it relieves the gaseous distention which follows so frequently in these cases. It puts the anastomosed bowel at rest. In the hands of Dr. Mayo this procedure has reduced the mortality something like 50 per cent. Certianly such a procedure is deserving of a greater usage.

C. C. Carroll, White Mills: I have not heard anybody mention yet the point of the rural practitioner treating these cases by enemas, purgatives, various manipulations, and things of that kind.

I have had the misfortune to see five patients with intestinal obstruction die, and I do not believe that we run up against anything with an uglier clinical picture than a case of intestinal obstruction. I have been going along with enemas and the old line of treatment. No case of acute intestinal obstruction should be entirely entrusted to anybody but a competent surgeon. That is they are strictly speaking, surgical cases and not medical.

Dr. Wathen has described the method of draining the intestine. If you have a patient with intestinal obstruction out in the country where you cannot get a surgeon, by the use of local anesthesia you can open the abdomen, reach down for the loop of intestine, pull it up, open it up, and drain it, relieving the patient of the shock, and then send him later to a surgeon. Every man should be taught how to do this simple operation. I would urge practitioners in the country not to fool with enemas and the old line of treatment in cases of intestinal obstruction. I want to emphasize that point particularly because, as I have said, it has been my misfortune to have seen five of these patients die, and I believe a large per cent of them could have been saved had I been able to get them to a surgeon in time, and cases of acute intestinal obstruction do not belong to any one except a good surgeon.

A. D. Willmoth, Louisville: There is no subject that will come before the Association that is of any more importance than the question of intestinal obstruction. I do not know of any class of cases that the surgeon dreads any more than to have a case of intestinal obstruction brought into the infirmary and placed under his care because of the fact of the high mortality. Seldom do we get a case that has not been given all forms of purgatives, including croton oil. It is not so important to know what is obstructing the gut as it is to know that you have an acute abdomen to contend with, and the sooner the abdomen is opened the better. If a patient complains of abdominal pain and a few enemas do not relieve the intestinal tract, there is no use to try further purgation. It is a surgical case and demands active interference. Many of these patients, when they begin to vomit have reached the later stages of the disease.

One fact I have not heard emphasized is this: we are too prone to let these patients put things into their stomachs, particularly water. They are dehydrated; they want to drink more water, and the more water they drink the worse off they are. The upper part of the intestinal tract becomes distended. We should wash their mouth out, wash their stomachs out and keep their stomachs empty. If two or three enemas do not relieve the bowel, you should have the patient taken to the hospital and open the abdomen.

I fully agree that lateral anastomosis is the operation of choice. I cannot understand how a man would defend end-to-end anastomosis; it is far more difficult; it carries with it greater risk. One can resort to the use of the Murphy button in these cases as referred to by Dr. McChord. I can do a lateral anastomosis just as quick, and if you have to insert a Murphy button and close the ends of the gut around the button, it takes a great deal of time, and you can do a lateral anastomosis as quickly as you can introduce the device. If you have not time to anastamose, pull the intestine through the abdominal wound as a double barrel shotgun, suture it to the abdominal wound, it quickly glues to the parietal peritoneum, then nick it with scissors and you have all the drainage you want. You drain the proximal portion of the gut. Whether you do a lateral anastomosis or resort to the use of a mechanical device, the quickest way you can drain the upper portion of the gut the better the chance these patients have.

Local anesthesia is far preferable to a general anesthetic in these cases.

B. F. Zimmermann, Louisville: The question of anastomosis is largely one of personal equation and the method with which the surgeon or operator is familiar. Personally, I much prefer end-to-end anastomosis, because I can do it quicker in the first place; in the second place, physiologically and surgically it is the better operation of the two. You can make just as secure an anastomosis and do it quicker and have just as good results and no more fatalities than we have had with lateral anastomosis.

In regard to the early treatment of these cases, I think we are all agreed the sooner we get to them the better, and I want particularly to emphasize the point in regard to obstructions which occur in postoperative abdominal conditions. We are all more or less familiar with the vomiting which ensues and the symptoms of obstruction which come on after abdominal operations. We have there an obstruction secondary to a previous operation, coming on within a week or ten days where we have an inflammatory condition. It is important not to attribute it to the anesthetic or manipulative procedures and to recognize the condition and interfere early, and in this way you will save lives by so doing.

Guy Grigsby, Louisville: I want to emphasize what Dr. Zimmerman has said, and I rise to defend end-to-end anastomosis. The continuity of the bowels is anatomically reestablished. An end-to-end anastomosis can be done much more quickly than a lateral anastomosis. There is no question about that. The fear in the minds of most surgeons is the question of stricture. Fortunately a few facts were brought out during the late war, and I have seen a number of cases of injury to the intestines in which practically the whole circumference of the intestine was destroyed by missiles: The British first pointed out the fact that in cases of this type very fre-

quently there was a chance to repair the intestine: that by suturing these wounds with the added bulwark of omentum fastened around the line of suture, many of these cases would be cured without a resection of the intestine. We know that the intestine is bountifully supplied with blood, and for this reason its recuperative powers are excellent. It is remarkable how these cases of extensive injury of the intestine can be repaired without resection.

What is to be done with the cases of postoperative vomiting? There is nothing that has helped me in these cases as much as gastric lavage. Doubtless many of you can recall cases that you considered instances of intestinal obstruction, yet repeated lavage of the stomach with the addition of enemas would frequently get the bowels to moving, and the patient would not need to be subjected to operation.

H. T. Rivers, Paducah (closing on his part): The question of intestinal obstruction does not rest solely in the hands of the surgeon. We crossroads surgeons must recognize the importance of intestinal obstruction, and I think most of us do. We want to impress upon the general practitioner the one fact that intestinal obstruction is ordinarily fatal. Appendicitis and other allied abdominal conditions may be recovered from in the case of acute attacks, but the majority of cases of intestinal obstruction will die if you do not get them to a surgeon quick. I want you to take that one thought home and think of it. The next time you have a case of locked bowel or fecal impaction, think of intestinal obstruction. We have all seen fecal impactions relieved; we cannot always diagnose it, but as I said in my paper the thing to do is to operate if you are not certain. If you are in doubt, operate. A clean operation, well done, is a heap better than waiting twenty-four or forty-eight hours to see whether the patient's bowels are going to move.

As to the after-treatment of intestinal obstruction, we have dehydration, as the prime factor and the toxemia that produces it. It is important to get water into these patients; put it in the rectum by the Murphy drip. If you do not do that, inject four or six ounces every two hours; give it subcutaneously, intravenously, just so you get salt solution in them. You can put in 5 per cent. glucose; I do not know that it does much good, but water is the prime factor in these cases.

E. S. Allen, Louisville (closing): I have very little to add to what I have already said. The discussion seems to have hinged on the better type of anastomosis that is advisable. I mentioned two or three weak points in lateral and end-to-end anastomosis in making a statement as to the preferable operation. Personally, I prefer end-to-end anastomosis. It certainly can be done much quicker, and time is an important factor. I have only lost one case of anastomosis where end-to-end union was done, and that patient was eighty-four years of age with a fracture of a hip, and he died in twenty-four hours, although the operation was done under local anesthesia. Local anesthesia is a great factor in these acute cases of intestinal obstruction, or wherever resection of the intestine is necessary.

It can be done without practically any shock. If the patient is in such a condition that you cannot do a radical operation, you can bring the intestine up and by means of enterostomy and catheter drain the intestinal contents.

With regard to the remarks made by Dr. Rivers, I believe it is generally conceded that the greater portion of the toxemia is from absorption. However, I believe where you have a perverted blood supply with venous congestion of the gut, you necessarily have chemical changes taking place in the gut wall. You have a pathologic chemistry taking place; you have perverted cells with deranged chemistry associated with pathologic metabolism, with absorption of toxins.

With reference to the use of the Murphy button in doing intestinal anastomosis, it takes as much time to introduce the button as to do an end-to-end anastomosis by suture.

Plastic Cholecystenterostomy. — Tagliavacche demonstrated at the local surgical society in 1919 an apparently healthy dog on which he had performed a special plastic operation six months before. (The technic was described in the Prensa Medica, Oct. 30, 1919.) Three years later he killed the animal, and the illustration here shows the perfect success of the operation. The liver is of normal size and aspect. The ligature of the common bile duct is still in place, and the passage is still impermeable. The new plastic duct, uniting the gallbladder and the cystic duct with the duodenum, had evidently worked perfectly during the three years and three months before the dog was killed.

Progressive Myopathies Due to Hereditary Syphilis.—Jeanselme presents the first clinically well studied case of a primary dystrophy of muscles of the Leyden-Moebius type (affection of spinal cord excluded by electric reactions) in a young man with a weak positive Wassermann reaction. His father is a syphilitic. Jeanselme assumes that syphilis can influence the muscular system like other organs, and does not discuss the possibility of a coincidence.

NEWS ITEM

Dr. J. H. Harrison, of Owensboro, has returned from Indianapolis and Rochester, where he has been taking an extensive post graduate course in Diseases of the Rectum.

THE MECHANISM OF PROSTATISM.*

By Owsley Grant, Louisville

I have selected the subject of the mechanics of obstructing prostate because I believe we are prone to forget, in our discussion of signs and symptoms of the disease, the basic pathological pictures which bring these signs to pass. I have selected some specimens from our

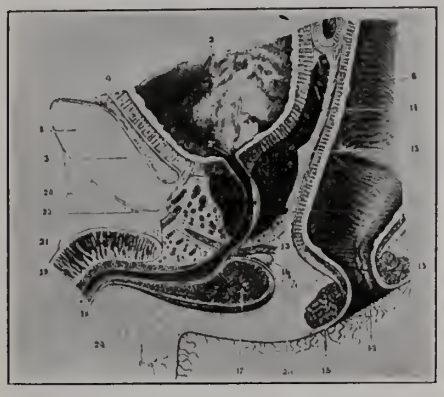


Fig. 1. Sagittal Section. Showing relation of prostate 8, to wethea 9, vesical orifice 2 and vesical sphincter 10. (After Spalteholz.)

own collection and the photographs of some others that I trust will refresh our memories on certain points that may have dulled in our minds. I am making no effort to discuss symptomatology of obstructing prostate, nor detail of its treatment, but simply the varying pathological picture and its interpretation.

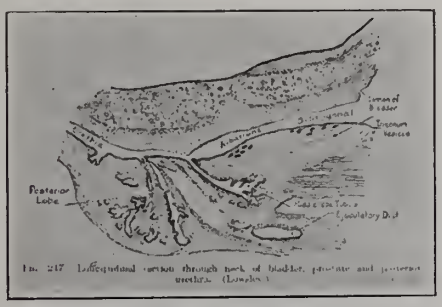


Fig. 2. Showing the glands of albarians and the subtigonal group which undergo hyportrophy.

The prostate gland is situated about the urethra, almost surrounding it on all sides, and has the functions of a mucous gland and probably also has an internal secretion. Adenomatous or sclerotic condition of this gland, causing obstruction to the outflow of urine, is Prostatism.

Prostatism is a disease of later life. According to Thompson's figures, 34% of men reaching the age of sixty have enlarged prostates and less than half of these suffer from prostatism, which means about sixteen out of every hundred men over sixty have definite symptomatic prostatism. No satisfactory cause is yet assigned, nor is the obstruction in ratio to the size of the prostate. Recent studies have furnished evidence that our old idea of prostatic obstruction is not anatomically correct and these writers have submitted



Fig. 3. Showing (a) Normal relation of the prostate to the vesical sphincter. (b) Enlarged prostate of the wrethral type.

convincing proof that it is not always the prostate itself which undergoes hypertropy. We have long been familiar with a group of periurethral and submucous glands described by Aschoff, which lie between the urethra and the prostate and extend beneath the trigone of the bladder. The tenet of these recent



Fig. 3. (c) Enlarged prostate of the intravesical type, showing distortion of vesical sphinctor. (After Keyes.)

pathologists is that it is these glands which really proliferate in old age and in their proliferation push outward the prostate itself until it becomes in advanced cases merely a band of compressed fibers and which form the line of cleavage where enuelation of the prostate is performed. Fig. 2. This idea, whether it be wholly anatomically correct or not, does account for the variety of forms of obstruction to the bladder neck which we shall show in our pictures, and helps us to understand this inconstant and erratic mechanism.

The results of this adenomatous enlargement of the prostatic region are two fold, the

*From Urological Department, University of Louisville. Read before the Louisville Medico-Chirurgical Society, Jan. 12, 1923.

Also read before the Jefferson County Medical Society, March 5, 1923.

Also read before the Louisville Urological Society, Jan. 20, 1923.

lengthening of the prostatic urethra with its consequent distortion, and the elevation of the internal urethral orifice. The normal urethral orifice is placed at the most dependent portion of the bladder when man is in the upright position, and consequently is the position of most efficient drainage. (Fig. 1.) The obstruction to the outflow of urine by



Fig. 4. Enlarged prostate showing the distinct adenomatous arrangement of the different portions of the gland.

compression of the urethra and the elevation of the orifice are the causes of the first signs of prostatism, namely, residual urine. So long as the patient can freely empty his bladder entirely he is not suffering from a prostate that demands surgical intervention. The clinical data on which we form our conclusions and base our decision to operate have their incipiency always in disturbed bladder



Fig. 5. Bladder showing moderate enlargement of lateral lobes with distinct middle lobe. Note trabeculations.

function. The first of these is usually an increased desire to urinate, manifested at night. Behind this elevated orifice is a potential pond which collects the urine that is never emptied and where the nidus of infection finds its lodgment. The result of this vesical derangement is that the inflamed mucous membrane is easily subjected to attacks of acute congestion after excesses of eating, exposure or drinking, which bring on partial or complete retention of urine which may be



Fig. 6. Bladder showing median ball valve enlargement, scant lobe hypertrophy. Note small globular enlargement of adenoma at right.

transitory or permanent, but which brings with it weakening of the musculature of the bladder, resulting in dilatation from which it never fully recovers so long as the obstruc-



Fig. 7. Bladder showing enlargement of both lateral and median lobes.

tion persists. To this obstruction is frequently added infection of the permanent residual urine and occasionally hemorrhage and the progressive states of cystitis and renal infection creep on the patient in a manner so indidious that the victim may not suspect its

existence. Figs. 4, 5, 6, 7, and 8. The progress of the enlargement of the prostate into the bladder is very prone to destroy the normal relations of the sphincter and affect its normal physiological function, as shown in Fig. 3.

The next pathology of mechanics connected with prostatism is the injury temporary



Fig. 8. Trabeculae and hypertrophied trigone seen by cystoscope in obstructing prostate.

or permanent, to the renal structure. Figs. 9, 10, 11, and 12 show the types of kidneys which we have found in routine post mortem cases at the University of Louisville in cases which had unoperated obstructing prostates. This injury to the kidney in the first stages of obstruction is capable of repair by restora-



Fig. 9. Bladder showing symmetrical enlargement of all lobes with small orifice of urethea, straws in ureteral orifices.

tion of the normally functionating urinary channel. When these prostatic cases go too long into the later stages, the kidneys are incapable of regeneration. Such are the doomed men, and no operative skill on earth can influence one iota the ultimate fate of a patient with insufficiently functionating kidneys. Very few of us surgeons see cases of real prostatism before serious damage has been done. It is astonishing through what degrees of discomfort and suffering most men of this age will go before they demand relief. How easily



Fig. 10. Same bladder as in Fig. 9 showing the enormous dilatation of the pelvis of the kidney.

we can all call to mind numerous patients who came to us, first with complete retention of five or six hundred cc, many of them with bladders filled with blood, a large percentage



Fig. 11. Bladder showing fibrous prostate, straws in ureteral orifices.

with calculi and many with dribbling urine. It is then necessary to determine what to do with these old men, and here we have full play for the niceties of judgment which jus-

tify the specialization of this branch of surgery.

Granted then that we have a patient presenting the symptoms of obstruction to urination which suggest enlargement in the prostate region as the cause, our first endeavor is



Fig. 12. Same bladder as in Fig. 11 with accompanying kidney showing marked hydronepheosis.

to determine definitely if the prostate be at fault. This is done by the employment of three lines of approach—the catheter, the palpating finger in the rectum, and the cystoscope. The catheter determines the size and course of the urethral canal and detects the presence of residual urine; the palpating finger in the rectum helps determine the size, consistency and type of enlargements,—though not always without possible error as shown in Fig. 13—and the cystoscope gives us a definite visual picture of the interior of the bladder and prostatic urethra. Figs. 14, 15, 16, and 17. All these determinations are of the utmost importance in the treatment of these obstructions and direct a distinctly definite line of procedure. Having made a definite diagnosis of benign prostatism, we may forget for the present the prostate and consider the bladder, the kidneys, the vascular system, and the alimentary canal. Our whole purpose now is to bring this man into such a state that his elimination is good, his immunity to infection high, and his metabolism approaching normal.

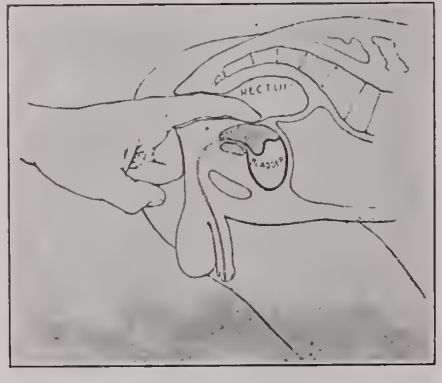


Fig. 13. Relation of palpating finger in rectum, showing impossibility of determining intravesical enlargement by palpitation.



Fig. 14. Direct cystoscope with diagram of view.

First: Study of the Bladder. We must relieve the residual urine, if in large quantities, by gradual syphoning by catheter; if small, by frequent irrigation. Do not fear infection from catheterization. It is as sure as taxes, and it is your friend, because in this state the patient develops a gradual immunity that will stand him in staunch stead when the fertile field for invasion of bacteria is made by the open wound. In every case of prostatism in which it is possible the patient should be examined by the cystoscope. The value of this examination is great; it shows the type of enlargement, the damage already done to the bladder, the presence of stones, and helps to exclude possible malignancy. After the patient is accustomed to the catheter a cystoscopic examination in skilled hands is as simple as catheterization.



Fig. 15. Indirect cystoscope with diagram of view.

Second, the kidneys. These organs may be damaged in two ways; one by extension of the damming back of the urine in the ureters and consequent destruction of secreting tis-

sue, and secondly by extension of infection. The estimation of the excretory function of the kidney is the most important single factor in the determination of procedure of prostatectomy. This function may be accurately estimated by many methods. The ratio of the output of urine to the intake of fluid and its specific gravity over a period of days, the quantitative determination of albumin and



Fig. 16. Types of distortion at vesical orifice due to prostatic enlargement, as viewed by indirect cystoscope.

solids are simple procedures but of great value. The determination of the per-cent of elimination of phenolpthalein injected intramuscularly on several occasions is a most valuable guide. In contradistinction to these excretory determinations is the estimation of the retention of toxic products in the blood which the damaged kidney is unable to elim-

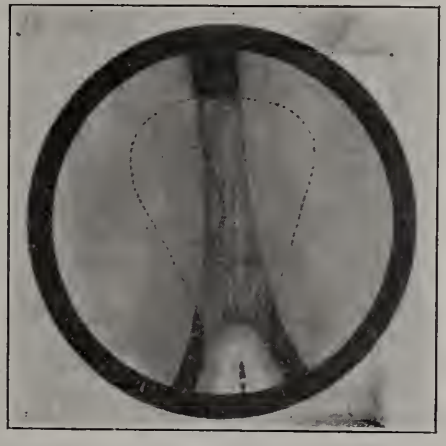


Fig. 17. Median lobe enlargement of ball valve type, as viewed by direct cystoscope.

inate. This is best made from a laboratory standpoint by estimating the amount of blood urea, non-protein nitrogen and creatinin in milligrams per 100 cc of blood. With these guides we have an excellent index to the functional capacity of the kidneys and their ability to withstand the strain and shock of a surgical operation and the selection of which cases can by care and rest be made fit subjects for operation, and which are beyond any operative relief.

Third; Circulatory System. Not all estimations can, nor should, be made in the laboratory. Clinically you can determine the condition of the man's heart and be on the alert for a flabby heart muscle that has suffered unappreciated but constant insults and



Fig. 18. Ma'ecot catheter surrounded by folded gauze fastened with 00 plain catgut. Ready for insertion into prostatic cavity after removal of prostate.

which may collapse when an added strain is felt. Atheromatous arteries are common in these men, and their general ability to improve under care must be considered. For this improvement we resort to rest, diet and the cardiac tonics.

Fourth: Alimentary Canal. Every patient with bad kidneys, no matter from what cause, has some alimentary disturbance. It may



Fig. 19. Catheter packed in cavity after removal of prostate, with thread extending through suprapubic wound which is then closed leaving only thread and strip of gauze extending from wound. Gauze removed in 48 hours allowing superapubic wound to close by first intention, the catheter remaining in place until superapubic wound is healed, about 10 days. (Modified after Pilcher.)

show in the furred, dry tongue so characteristic of uremia, or in the toxic vomiting of pus kidney. The alimentary canal eliminates a large portion of the waste matter of the body under normal circumstances and it must

be toned up to its fullest capacity to help the already damaged kidneys.

We then consider each of these systems or organs, and, granted we have an obstructing prostate, determine what is best to be done. Haste is fatal. Now and then we hear of some prostatic who is rushed into the hospital with complete retention and his prostate enucleated and he has a marvelous recovery. The Master of the House of Many Mansions does not want that patient very much or he has let slip a most excellent opportunity to get him. Truly, such result is marvelous, marvelous because it is so rare that any man subjected to such indignities lives to tell of it. *Remember, we are not looking for the spectacular, the romantic; what we are searching for is the greatest possible margin of safety.*

A word about operation and treatment. The choice of method is determined by too many factors to admit of even a mild discussion. One need have in mind two factors when he operates; the complete enucleation of the gland with the minimum damage to vital or important structures, and complete hemostasis.

The after-treatment is quiet and free drainage, support to the circulation and elimination, which is unquestionably best accomplished by ingestion of large quantities of water. If proper drainage is instituted, lavage of the bladder is a perilous and silly pastime until the patient is well on the way to recovery.

In practically all our cases, after removal of the prostate, we are closing the suprapubic wound, save for a thin strip of gauze placed in the bladder about the catheter to control any possible hemorrhage as shown in Figs. 18 and 19. This permits primary healing of the wound and obviates the disagreeable features of leakage so common in the past.

The vast decrease in mortality in prostatectomy in the past twenty years is due solely to the appreciation of the importance of preoperative care and postoperative treatment. Every adjunct of medicine from catharsis to transfusion has its place in these cases, and those of us who have these fragile men entrusted to us and can offer so much must not break faith.

DISCUSSION

J. Garland Sherrill: Dr. Grant has made a very clear presentation of his subject and we can only emphasize in the main what he has said. It seems to me the time to get the best results in prostatic cases is before they go to the surgeon because at that time infection is moderate. Although Dr. Grant seems to think infection is of advantage prior to operation, I am inclined to think the patient does better if not infected.

There is one point which the essayist did not sufficiently emphasize, and that is the effect of the enlarged prostrate on the vascular supply, particularly the venous return from the bladder. If the prostrate becomes large enough to interfere with the venous return, the patient has a great deal more difficulty from congestion or hemorrhage into the bladder and there is a greater tendency to retention than where the prostrate does not cause venous congestion.

As the prostate becomes larger it presses upon the veins to such an extent that there is a "damning back" of the blood, and oftentimes even where no infection is present the patient applies for treatment because of hemorrhage into the bladder. This is a point which should always be borne in mind.

Louis Frank: From the standpoint of the study of diseases of aged men there is to my mind none which is of greater importance, certainly none that is more frequently seen and that is so often mistreated or permitted to reach a stage where relief becomes dangerous than that of enlarged prostate. I have given considerable study to the subject of enlargement of the prostate, not only from the standpoint of the mechanics of obstruction but also from the standpoint of the treatment of the obstruction, and the preparation of the patient to successfully withstand removal of the offending organ.

There are so many things in the paper that could be stressed that necessarily we will have to omit some of them in the short time allowed for discussion. There are a few points, however, that I desire to particularly mention. One thing that I have always been interested in is the cause of the damage to the kidney in prostate cases. I cannot conceive, nor do I believe, and I question whether it is susceptible of demonstration, that ascending infection of the kidney occurs in these cases without over-distension. If we consider the anatomy of the ureteral orifices, the safeguards that are thrown about them to prevent backward flow of urine and the protection that is afforded against ascending infection, I do not believe we can do such a thing merely as result of obstruction with a limited amount of residual urine in the bladder; in other words, without dilatation of the ureter or at least without destruction of the valve at the uneteral orifice, and when I say destruction I mean so far as function is concerned and which must ensue as a result of dilatation. I have attempted to produce infection of the kidney experimentally by the injection of bacteria into the ureters, and this has been attempted by others on numerous occasions, and it is a most difficult thing to bring about.

I know that we have in the peri-ureteral fat and connective tissue lymph glands, and we do by this route occasionally have ascending infection. I cannot, however, believe these badly infected kidneys occur from distension of the pel-

vis of the kidney as a result of ureteral obstruction producing the various other pathological conditions noted when the kidneys are badly damaged in connection with prostatic obstruction. I believe in all such cases there must be impairment of the efficiency of the ureteral orifices.

I have made it a point in cases of long-continued obstruction where there was a history of overdistention of the bladder, and even where there was not, to carefully examine the ureteral orifices, and in all of them where there was overdistension, even without such history, we have always found the ureteral orifices enlarged, that is the valves not functionating. I have seen them so large that the tip of the finger could be easily introduced. Obstruction must exist for a certain length of time before overdistension of the kidney pelvis and hydronephrosis can occur. Overdistension also plays a tremendous part from the standpoint of the urinary output by the compression damage done to the structure of the kidney itself.

In regard to the pictures which Dr. Grant has presented: One might gain the impression that the hypertrophied prostate always produces trabeculation of the bladder, that this is always a concomitant picture of the obstruction. This has not been my experience. We have often seen bladders that have been overdistended that were tremendously "thinned out" and in which so far as could be determined by visual inspection through the cystoscope there was no trabeculation. At operation there was no hypertrophy of the bladder wall, on the contrary the wall was markedly thinned, the entire bladder being overdistended. That is not uncommon, and we have seen numbers of individuals with over 100 ounces of urine in the bladder, many of them with 60 or 70 ounces. These individuals urinated at frequent intervals, or dribbled, getting rid of the overflow, yet the bladder wall was not hypertrophied and in the vast majority of such instances there was a non-trabeculated rather than a hypertrophied and trabeculated bladder. I believe that hypertrophy and trabeculation are associated with mild bladder infections.

As to the cause of infection and its effect upon the individual, I am of the opinion that most of the badly infected bladders are those which have been catheterized either early in the disease or repeatedly. Dr. Grant states that such individuals are in better condition to withstand the steps of the operation than a non-infected individual is. While this may be true to a certain extent, still it is a proposition which may be the subject of a different interpretation and which might easily be open to quite a little discussion. I know some years ago Chute of Boston and others injected vaccines in individuals who had non-infected bladders for the purpose of building up tolerance to the infection which ensues post-operative and they believed from their observations that their results were better in those individuals who had such pre-operative vaccine treatment than in those where vaccination had not been employed; these were all cases with clean urine. I believe probably the cause of bad results in many individuals with non-infected urine has been because of the overdistension and insufficient time for pre-operative preparation, a necessary part of which is the very gradual emptying of the bladder giving the kidney time to accommodate itself to removal of the back pressure.

We know it is impossible by any method yet devised to remove the prostate without having secondary infection of the prostatic bed ensue. I am aware of no way by which this infection can be prevented; it may not be severe but it always occurs. The urine often becomes alkaline, incrustations may occur, the odor may become putrid, and a severe cystitis develops. This latter is just as deserving of treatment, usually extending over quite a long period after removal of the prostate, as the individual is deserving of treatment in preparation for his operation.

I think the mistake is made by many surgeons of dismissing these patients when the suprapubic or perineal wound is closed and sending them home without instructions for further observation and treatment. It has been my experience that all these individuals have severe cystitis and this requires careful attention if the patient is to become entirely well, and treatment must be continued over a long period of time.

I was very much interested also in Dr. Grant's statements concerning preparation of these patients for operation. From a practical standpoint, so far as we are concerned as surgeons, in the treatment of these individuals this preparation is probably the most important phase of the subject. I do not mean from a pathological standpoint but from the practical standpoint of getting the patient well. I do not care whether you are going to do a single stage operation or a two-stage operation or what you do, the point that should not be lost sight of in the treatment of prostatism is a most careful preliminary study and a thorough estimate as to just what the individual can stand and what he will be able to go through with. Even with the utmost care some of these individuals will not survive. We have very recently lost a patient who never reached the stage of a prostatic removal. Under local anesthesia we simply introduced a tube into his bladder for drainage, he was never able to be brought to the point where his prostate could be safely removed; yet technically I presume such a death would be charged to prostatic operation. In such an individual the phthalein output, blood studies, character of the urine, etc. may be entirely satisfactory, yet death may occur from a weakened or badly damaged myocardium. I mention this to illustrate a point touched upon

by Dr. Grant in his paper, and that is the careful study of the circulatory apparatus and particularly the heart This is very important and may be better appreciated when the age of these patients is borne in mind. Many of them have myocardial changes, brown atrophy or fatty changes in the heart muscle, and they are not in condition to withstand very much interference. Death may occur no matter what method you use or how you treat them. Some of them, and this was true of the individual just mentioned, will show no response to digitalis or other remedies given to "buck up" the heart. We have had one or two such individuals before, being compelled to send them home with a suprapubic drainage catheter in situ, nothing else seemed justifiable. On the other hand, most of these, however, who have disabled kidneys, unless it is infection with suppuration and destruction of the kidney substance as a result, can be brought to the proper state for successful operation.

A month or more of preliminary treatment may be required to get some of these individuals in condition for successful operation, others can be operated upon immediately without much danger. Some of our prostatectomized patients I am absolutely sure could not have withstood the shock of operation even at the end of four weeks after a preliminary cystostomy, some of them were treated for several months before attempting removal of the prostate. Recovery, however, fully compensated for the preliminary trouble and preparation.

I think if there is any one branch of surgery that deserves special study it is certainly in disease of the prostate gland. We have such a complex picture to consider, we have so many things that may aise, so many different features that must be taken into consideration, that probably those of us who are engaged in the practice of general surgery may be a little prone to hasten the patient, maybe we do not have the necessary patience to wait until he has reached the proper stage for removal of the prostate. I think time is a tremendous factor in these cases it matters not what method is used. The question of method is one which must be decided by the surgeon himself. No matter what method of approach or removal is used in dealing with prostatic disease, we should not under any circumstances permit ourselves to be hurried either by the patient, by ourselves, by the family or anybody else. I am convinced that the patients I have lost, and I am glad to say they are not many, have been lost as a result of not postponing the operation to a little later date than it was done. Perhaps I am influenced somewhat by the desire of the patient to return to his home, by the statement that the hospital expense was too great, it may have been the urgency of the family physician or friends of the family, that led me to perform the final stage of the operation a little earlier than it should have been done. None of these features, however, should be allowed to influence the surgeon in his determination to select the favorable time for operation.

I am delighted to have heard Dr. Grant's most excellent paper and congratulate him and I am further glad that we have here in Louisville a real urological surgeon who is devoting his attention to true urological surgery.

Claude G. Hoffman: Dr. Grant has presented a most interesting paper and his pictures are wonderful. I merely rise to lay stress upon some of the points he has mentioned.

When we realize that from thirty to forty per cent of males develop prostatic hypertrophy before the age of sixty years, and as he has told us less than half of these have symptoms of obstruction, and when we add to that percentage twenty-five per cent who will come to us with malignaney of the prostate, the importance of the subject becomes readily apparent. If it were possible to make suffieiently frequent routine prostatie examinations in all males after they have passed the age of fifty, we would be able to detect beginning degenerations that could be corrected by minor treatment, or if necessary by operative measures, and a great many of these patients could be permanently relieved at that stage; but as he has stated ordinarily prostatics do not apply for treatment until the condition is far advanced, when renal degeneration has already occurred from obstruction, and then a great deal of time and careful treatment is necessary before a cure can be obtained.

Relief of the over-distended bladder is another point that should be stressed: The ordinary medieal practitioner who has had little experience with prostatics, when confronted by a patient with over-distended bladder, seems to think the first thing to do is to relieve the distension and proceeds to do this as quickly as possible. That is one thing which should be avoided whereever possible. In some cases of over-distended bladder from prostatic obstruction that I have seen, several days were required to thoroughly relieve the distension. A small portion of the urine is withdrawn at frequent intervals, and the procedure is repeated until distension is finally relieved. Sometimes when the distension is unavoidably relieved at one sitting the bladder is refilled with borie aeid solution. I believe the indwelling catheter should always be used where possible. A clamp is placed on the distal extremity of the catheter and urine allowed to eseape whenever desired. In some cases a catheter cannot be introduced and resort must then be had to supra-pubic drainage or suprapubic cystotomy. This is not a safe procedure in many cases because the bladder is emptied and distension relieved too quickly.

The importance of complete urologieal examination in every case cannot be too strongly em-

phasized, because there are many conditions which may be overlooked or that might not be suspected from the clinical symptoms present. The patient may have temporary obstruction and examination per rectum reveals a slightly enlarged prostate, and after cystoscopic examination it will be found there is little intra-vesical enlargement in comparison to that felt per retum, or vice versa. Again, the patient may have a vesical or urethral calculus which is causing obstruction. I have in mind a patient seen a few days ago who had urinary obstruction and a diagnosis of hypertrophied prostate had been made. Examination of his prostate per rectum did not reveal sufficient enlargement to cause obstruction. It was then thought he might have considerable intra-vesical enlargement, but on cystoscopic examination a vesical calculus the size of a hen's egg was found. His urine was negative except for a few pus cells as might be expected in a case of this kind.

The method of controlling hemorrhage Dr. Grant described, which is really by means of a modified Hagner bag, is quite satisfactory. This plan has been used in the city hospital by Dr. Grant and myself on several occasions and has been found effective. Objection has been raised to the procedure under the belief that removal of the packing might give the patient considerable pain. However, this objection cannot be sustained. The gauze becomes saturated with urine and it is snrprising how easily it can be removed as described by Dr. Grant. The Hagner bag has proved unsatisfactory in most hands for various reasons. However, it is still used by many operators. The most effective way of securing complete hemostasis is by the plan Dr. Grant has described.

Dr. M. Casper:Dr. Grant is to be congratulated on the splendid paper and excellent pictures which he has presented. I would like to emphasize the importance of early examination of patients with prostatic enlargement. Of course it is like everything else in surgery, the earlier the patient applies for treatment the better for all concerned. The surgeon should get the patient early before the later stages have developed as shown by the pictures we have seen and before one or both kidneys has been extensively involved as a result of the obstruction.

A very important and essential point in prostatic surgery is the two-stage operation. Latterly, however, in a few instances I have been able to overcome the difficulties incident to the one-stage operation by the use of an indwelling catheter preliminary to the operation. This often relieves back pressure on the kidney and allows the organ to recnperate its normal powers of excretion. In some cases a persistent urethritis has developed and we have found it necessary to resort to preliminary suprapubic drainage anyhow. I do not know why it is, but everyone who has done any urological work knows that some urethras are more sensitive to the catheter or sound than others. Sometimes irritation is produced, the patient has a chill, fever and other annoying symptoms. Why these occur is difficult to explain; it may be a peculiarity inherent in the patient himself.

Another important point in prostatic work is to determine the excretory functional power of the kidney by the introduction of phenolthalein or some other functional test to ascertain just how badly the kidney is damaged. We should also study the cardiac mechanism the intestinal tract and other organs as described by Dr. Grant.

L. L. Smith: I would like to express my appreciation of Dr. Grant's interesting and instructive paper. I have always been impressed with the importance of adequate pre-operative preparation of patients with prostatic enlargement, and in that way getting them in suitable condition to withstand the necessary surgical procedure. A complete urological study should be made in every case, including blood, urea estimation and functional tests of the kidneys to determine how much they are damaged and if the patient will stand the shock of operation. Cystoscopic examination, either by the direct or indirect method is of course, of great assistance in the diagnosis.

The question of just how prostatic hypertrophy arises, whether it is from the sub-trigonal glands or in the prostatic tissue, is very interesting. The theory mentioned by the essayist, that the enlargement originates in the glands, sounds very plausible and may prove to be correct.

B. F. Zimmerman: The feature which impressed me more than anything else in Dr. Grant's paper was the emphasis he placed on the condition of the patient as an operative risk. By virtue of their age and impairment of physical health by long continued prostatic obstruction, these patients are not as favorable surgical risks as those we see earlier in life. When one adds the crippled condition of the kidneys from back pressure and congestion, cardio-vascular changes, etc., it can be readily understood why careful study of the patient prior to operation is of paramount importance. I was glad to hear Dr. Grant emphasize the point that prostatic patients should not be operated upon as emergency cases. Other abdominal operations, such for instance as appendicectomy for acute appendicitis with impending rupture in a patient whose physical condition has not been impaired, can be quickly performed and there is little danger in such emergency operations; but when it comes to operating upon chronic prostaties, making them emergency cases, the mortality is certain to be very high. I am aware of no other class of cases requiring such careful study as to general condition and the surgical risk involved as these old prostatics.

The method of operation Dr. Grant is using at the present time seems to me to be a very sat-

isfactory one, to judge from the cases which I have seen in the hospital. Within twenty-four hours the patient is comparatively comfortable, urine is passing through the catheter, and the satisfactory condition of the individual is remarkable. I have used the method he has described with some modifications. I have been in the habit of using an ordinary catheter with silk though tie top to keep packing in poll around it and a weight attached to the end. I would like to utter a word of caution against using too much weight in these cases, because I have seen a very distressing result in one instance, and it was some time before the patient recovered from the weight attachd to control hemorrhage. I do not believe any weight is necessary.

From cystoscopic examination of the bladder we obtain a great deal of valuable diagnostic information, as Dr. Grant has said, not only about the condition of the interior of the viscus, but also about the prostate itself as he has shown in his pictures. To anyone familiar with the cystoscope the examination is not difficult to make and it gives an adequate idea of the condition which will be encountered when the bladder is opened.

Owsley Grant (closing): I wish to thank the members, especially Dr. L. Frank, for the liberal discussion of my paper. I thought the pictures shown would be of particular interest to those of you who are not doing prostatic surgery and they were shown principally to emphasize the end- results of untreated cases.

Dr. Frank has touched the keynote in his discussion of two points; first of all that not every case is operable. The kidney pictures shown illustrate this point. After the kidney has become practically destroyed as the result of prostatic disease we cannot hope to get the patient to a stage where prostatic operation can be performed with safety.

The second point is the history: Dr. Frank was frank enough to relate some of his own experiences, and I will mention one or two cases which will bear out precisely what he has said. I opened the bladder of a patient at the Norton Infirmary a week ago believing that conditions would be such that the prostate could be delivered in perhaps three weeks. The phthalein output was satisfactory and the blood study showed nothing abnormal He is just the type of individual Dr. Frank has described, and it seems a little uncertain whether he can be brought to the stage where the prostate can be removed.

The matter of kidney infection following obstruction from prostatic enlargement has not been fully investigated. As Dr. Frank has stated it is very difficult to cause infection of the kidney by the injection of bacteria unless there is obstruction. I tried this on dogs and it has been tried many times by others, and it is difficult to produce kidney infection in the absence of obstruction.

Obstruction in prostatic cases is produced by contraction of the bladder wall about the ureteral orifice, urine is thus retained in the kidney and great pressure is necessary to expel it because of the obstruction below. The urine may become infected and destruction of kidney structure results. It has been my custom to use the retention catheter in all prostatic cases. I believe they do better under these circumstances than when the catheter is not used. The catheter may be allowed to remain in situ for a considerable period of time with advantage, and I believe the results in prostatic surgery are better when this plan is followed. The patient does not develop virulent infection, but it allows him to develop a certain degree of immunity. After the prostate is enucleated there is always infection of the prostatic bed.

Dr. Frank is quite correct, all bladders do not look like those illustrated by the pictures shown. It must be remembered these pictures were made from patients who were not fortunate enough to get into the hands of a competent surgeon, they are post-mortem pictures, and the bladders have contracted, due to the ordinary methods of preservation. Like Dr. Frank I have seen many cases where the bladder was very thin and there was great distension. In the majority of instances, however, the bladder wall will be found hypertrophied and trabeculated.

I want to express my appreciation for the opportunity of using the museum at the University of Louisville to get some of these post-mortem specimens which have been very instructive to me.

I did not discuss the various methods of treatment of prostatic obstruction for the reason it would have made the paper too long, and I merely wanted to emphasize two or three features which I shall take the opportunity of reiterating.

First of all, the pathology can be determined in practically every case of prostatic obstruction. This is determined by three mehods (a) the catheter, (b) the cystoscope, and (c) the palpating finger in the rectum.

The gentlemen who have discussed the paper have emphasized the importance of determining the functional capacity of the various organs of the body, especially the alimentary canal, which really lie outside the genito-urinary tract, but which bear an important relationship to the mortality.

One thing was mentioned that I wish to consider, and that is use of the retention catheter. It is my personal preference to employ the retention catheter in all these prostatic cases where it is possible to do so with safety to the patient and then complete the operation in one stage.

However, this cannot be safely accomplished in all cases. The one-stage operation is much simpler in both technique and execution. It avoids a long period of convalescence and if a catheter can be introduced and kept in situ for a sufficient length of time it simplies matters considerably. The ordinary catheter (Nelaton) which is used to catheterize patients in office practice is made of rather hard rubber and has a solid end which sometimes causes irritation of the bladder. I have found two types of catheter which are eminently satisfactory for the purpose I have described, they are the Wishard and the Malecot made in France. I have never had a patient complain of experiencing any discomfort from use of either of these catheters. I believe in the vast majority of cases either one of these catheters can be used without causing any trouble. These catheters are of infinitely softer and more pliable rubber and have hollow tips which makes them much less irritating to the patient, and in our cases are extremely well borne.

PANCREATIC CYST, REPORT OF CASE*

By E. W. Northcutt, Covington

Pancreatic cysts are comparatively rare when we consider the great number of abdominal operations throughout the world. However, with this enormous number of operations, such a rare condition as this has been found many times. Virchow described two forms of retention cysts of the pancreas. (1). Since then enough cases have been reported and data gathered to warrant a classification of these cysts. The following classification was suggested by Robson and Moynihan in 1902:

1. Retention cysts.
2. Proliferative cysts.

Cystic adenoma, Cystic epithelioma.

3. Hydatid cysts.
4. Congenital cystic disease.
5. Haemorrhagic cysts.
6. Pseudocysts.

Since this classification, Judd has reported a dermoid cyst of the pancreas arising in the body and tail, and containing hair and one tooth. (2). This must now be added to the classification.

It is well established that there is a close association of acute and chronic pancreatitis with the formation of cysts, and this in turn is associated with infection of the gallbladder and the ducts. In fact, Cammidge asserts that the most common cause of cyst is chronic interstitial pancreatitis, with contraction of the connective tissue, producing pressure upon the ducts (3) McPhedran reported a case of biliary colic and jaundice preceding cyst formation as long ago as 1897. (4).

Most of the cases of pancreatic cyst reported have been individual cases reported over a long period of time and from widely separated sections of the country, which make study and data very difficult. Pancreatic cysts may be found at any age, having been reported as young as 11 months, and as high as 76 years. Stieea a case of 76 years old. (5).

Pseudo cysts do not arise directly from the pancreas, but may contain pancreatic fluid, because of the injury to the pancreas, which is the usual cause of this form of cysts. Usually present in the lesser peritoneal cavity the foramen of Winslow becoming occluded.

A cyst tumor may occur in any part of the gland, but it is oftenest met with arising from the body and tail. It may present in several different situations. First, it may present about the colon with the stomach in front. Second, with the stomach above and the colon below. Third, with both the stomach and the colon below. Fourth, with both the stomach and colon in front of it. Fifth, with both stomach and colon above it. Sixth, with the stomach and colon and small intestine above and in front of the tumor. The last situation is described by A. Primrose of Toronto, Canada, in a case report in Surgery, Gynecology and Obstetrics, April 1922, volume 34, number 4, page 431.

The case which I report occurred in a man with the following history:

Family History. Father died at age of 57 of pneumonia. Mother living in good health, age 76. One brother died of T. B. at age of 24 in 1901. Four brothers living in good health. One is in the U. S. Hospital with T. B. Two sisters in good health, age 51 and 45. One died of diptheria at age of 15.

Personal History. Age 38. No childhood diseases except measles. Pneumonia at age of 20, sick 6 weeks. Tonsillitis every winter until 12 years ago, but not since then. G. O. at age of 21. Has had "indigestion" for about 3 years. Could not eat greasy food. This would cause severe cramps in "pit of stomach" and vomiting. Two years ago patient had a severe attack of cramps, and pain in abdomen just below umbilicus. Could not breathe. Pain was drawing in character and seemed to radiate to pelvis. Vomited a great deal. Was sick about 3 hours. Went to work following day. Second attack was 2 months ago, lasting 5 hours and similar to first. Pat-

*Read before Campbell-Kenton County Medical Society, March 15, 1923.

ient usually feels well. Has lost no weight. Appetite not good. Irregular. Sleeps well.

Present Illness. Began as a belly ache and inability to get a good breath. Pain was just below umbilicus and extending into pelvis, at times was lancinating in character. Pain was not severe in epigastrium. Began vomiting 2 hours after onset and has continued until admission to Hospital. Became very weak.

Physical Examination. Made 14 hours after onset. Patient was lying doubled up in bed vomiting every few minutes. Nothing was being vomited but a little mucus. Was very pale, pulse 90, temperature 97, respiration 28. Seemed to be in intense pain, gasping for breath at times. Eyes, ears and nose negative. Teeth, many missing, some crowns, others very bad. Throat negative. Lungs negative to ordinary examination. Heart—rapid, otherwise negative. Abdomen—very rigid all over and so tender it was impossible to make a satisfactory examination.

Diagnosis. Perforated duodenal ulcer. Examination under ether revealed a large tumor in median line, extending from epigastrium to brim of pelvis.

Operation. Incision was made through the upper right rectus muscle. On opening the abdomen we immediately came down upon a large bluish colored tumor, which was quite tense and contained fluid. It presented between the stomach and the colon, stomach being above and colon below, and was covered by the gastro-colic omentum and peritoneal covering. The small intestines were crowded into the pelvis on the left side. The stomach and duodenum were normal. On account of the condition of the patient, no further examination was made of the intra abdominal organs. The gastro-colic omentum was opened. The cyst was aspirated, then stitched to the abdominal wound and the sack freely incised. It was found to be multiocular, having 3 distinct compartments. The fluid it contained was of a chocolate color, with several pieces the size of a finger, resembling firm clot tissue. Approximately 4000 C. C. was removed. The cyst was then packed, a stab drainage placed in the pelvis, and the abdominal incision quickly closed with through and through sutures of silkworm gut. Patient was put to bed in Fowler position and Murphy drip started immediately.

A specimen of the contents of this cyst was sent to the Langdon Meyer Laboratories for examination. Through a misunderstanding of the girl in the office they were not examined for pancreatic secretions. Following is their report:

"Cyst put in formaldehyde for section."

Paraffin sections; H. & F. Stain shows material to consist chiefly of Blood Clot and containing many leukocytes. Also areas where the erythrocytes are plainly shown and in large numbers.

Fluid centrifuged and stained for acid fast and gram.

No echinoccus hooklets or embryos.

No Bacteria of any kind.

No acid fast organisms."

Developing some bronchitis caused him to be very uncomfortable for about 3 days, and there was considerable nausea for the first 48 hours. Packing was removed in 48 hours and a lighter packing inserted. The tube in the pelvis was removed on the 4th day. All packing was removed from the cyst on the 4th day, and a tube placed into the largest compartment. Drainage was very slight and ceased altogether by the 6th day, when all drainage was removed. After the 4th day the patient had no more discomfort, began to eat well, color and general condition improved, and he left the hospital on the 14th day, saying he felt better than he had felt for a long time.

The incision where the cyst wall was attached was still open about it, and no attempt was made to close it because these cysts often reform, and sometimes drain for months. Occasionally one is able to remove a cyst entirely. This may be undertaken if adhesions are not marked, and provided always the patient's general condition will permit. John B. Murphy, in speaking of pancreatic cysts, said, "It is satisfactory to perform a complete operation, but never at the expense of additional hazard to the patient." (6). The partial removal is probably worse than no attempt at removal at all, because you are not able to attach the cyst walls to the abdominal walls for drainage, and you do not have as good control over the situation if there is drainage or reforming of the cyst. Of course, if the cyst is thought to be malignant, every attempt should be made to get it all out. In the ordinary case, the operation of choice is usually attaching the cyst wall to the incision and drainage. The prognosis in these cases is always uncertain. The immediate recovery may be good, and the patient may die in a short time of diabetes. Our patient had no sugar at any time during his stay in the hospital, which may be taken as a good omen.

Only time will tell us the prognosis in this case.

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SUBACUTE VEGETABLE ENDOCARDITIS.*

By Leon K. Baldauf, Louisville

The diagnosis of subacute vegetable endocarditis may at times be very difficult, particularly in the cases where the cardiac features are obscure and the signs and symptoms of infection prominent; where cardiac murmurs are scarcely audible and signs of broken compensation not evident; where attention is drawn to an infection because of the temperature, chills, rigors and leucocytosis and a murmur even if it is heard is neglected because of its apparent unimportance.

How frequently in these cases have diagnoses of malaria, typhoid fever and pyelitis been made, and how surprised at the failure to relieve the condition with quinine or at the persistency of symptoms long after a reasonable infection of typhoid should have ended?

In the field of diagnosis probably no disease emphasizes more the value of the routine complete physical and laboratory examination. Every organ which could possibly contribute to the infection should be excluded, for it is only by this exclusion that the cardiac features become prominent. Every persistent and unexplained temperature with a moderate leucocytosis should draw attention to the heart, and always in such cases where a murmur is detceted a blood culture should be made. If the organism is satisfactorily isolated the diagnosis is positive. Frequently with elevation of the temperature the organism may not be found in the circulating blood at the first examination and repeated blood cultures may be necessary.

The type of heart on which the vegetation has been engrafted has been carefully studied; since aubacute vegetative endocarditis has been recognized as a fairly definite clinical entity, a previous valve defect or endocarditis has been considered essential. The study of a large number of cases assigns this defect to the virus of rheumatism, a few to congenital lesions, and a very small percentage to syphilis.

At the symposium on infectious endocarditis at the 1920 meeting of the British Medical Association Libman said: It is interesting to note that the subacute bacterial infectious endocarditides occur mainly on the basis of valvular defects due to the rheumatic virus and much less to other types notwithstanding the great frequency of syphilitic valvular defects. Horder stated at the same meeting that any long-standing lesion was good enough to serve as the secondary focus of infection, but he as well as nearly all of those taking part in the discussion, strongly emphasized the predisposing influence of rheumatic fever.

Horder summarizes briefly the following features of this type of endocarditis: The onset is most often insidious; the general symptoms include loss of strength and tone, a sallow complexion with anemia, moderate loss of weight and fever. The heart gives evidence of endocarditis at some time or other in almost all cases and in the majority there has been previous valve injury. Widespread arterial embolism takes place and in most cases blood cultures are positive.

The course of the disease is slow but progressive, and though remissions occur it is, once established, almost invariably fatal. Recoveries have been reported. The fatal duration of the illness is from three months to two years with an average duration of six months; death occurs from toxemia, from heart failure, from uremia, or from cerebral or coronary embolus.

The post-mortem findings include a vegetative endocarditis on the valves or wall of the heart with little or no ulceration and widespread embolic infarction without suppuration. As a result of the embolic process there is found a form of glomerular nephritis more or less characteristic of the disease.

The incidence of the disease varies, but in the English hospitals statistics give a frequency of one in every two hundred admissions. Most of the infections occur between fifteen and fifty years, and half between twenty and forty years. Sex incidence is equal.

Frequently these cases go for months without a diagnosis, and probably the earliest sign of the disease is a fever which has not been adequately explained. In a series of cases reported by Billings: In one patient the symptoms began two years before the real condition was recognized; in one fourteen months before a definite diagnosis was made; one patient suffered more than two years, and in the earlier stage the diagnosis of typhoid fever was made for a condition which was in all probability infectious endocarditis.

Next to the unexplained fever, the atypical rheumatic stage is probably the most common symptom. Pains with or without swellings suggest lumbago, myalgia, etc. Next we have symptoms which are mainly embolic in origin; numerous petechiae, red and painful nodules beneath the skin, sudden pain in the left side suggesting an infarction of the spleen, blood in the urine as the result of an embolus in the kidney, defective vision, retinal embolism; hemiplegia, cerebral embolism.

*Read before the Louisville Medico-Chirurgical Society March 9, 1923.

When the disease has been fully evolved there are four cardinal signs: (1) multiple arterial embolism, (2) endocarditis, (3) isolation of the organism, and (4) fever.

Careful search should be made of the skin for petechiae. Those in this condition are to be found mainly over clavicle and bone of the neck. Almost equally important is the finding of paler yellow areas,—probably petechiae which may be disappearing. Painful and discolored nodules appearing in the skin of the upper and lower extremities are probably of some diagnostic importance. They are found most frequently on the pads of the fingers and toes, or may be found in the soft tissues beneath the skin. The appearance of blood in the urine preceded by severe pain in the region of the kidney may be the first clear confirmation of a suspected case. The evidence of a heart lesion may be absent in many cases for a considerable period of time, and in a few cases may be permanently lacking.

In one of Horder's cases the endocarditis was purely mural, the valves remaining intact. Case 8 reported by Billings was examined by a very competent physician for months before a diagnosis was made. In his case 10 no murmur was heard until a month preceding death.

Characteristics of the organism isolated from the blood stream: The cocci isolated in practically ninety-five per cent of cases produced fine colonies on blood agar; plates surrounded by a greenish discoloration. There is no hemolysis; there is a peculiar tendency for the colony to adhere to the plate media. Frequently the whole colony is removed in a mass and must be practically mashed before a smear can be made. The more chronic the case, or the later the organism was isolated, the greater the tendency for the colony to adhere to the surface of the medium. After frequent transplantations on culture media it reverts to the characteristics of the pneumococcus.

Source of infection: A few cases have followed attacks of pneumonia. A number of cases have followed attacks of tonsillitis; and in many instances abscessed teeth seemed to be the port of entry. Infected antri and sinuses are supposed in some instances to have had an etiological significance.

Prophylaxis: This lesion presupposes a previously injured endocardium,—an endocardium for the most part warped and thickened by rheumatism. Theoretically at least, then, this form of endocarditis might be considered preventable. Whenever as the result of rheumatism damage to the heart has been done, further damage should be prevented by the elimination of every focus of infection.

To quote Libman: If we could prevent rheumatic fever we could prevent nearly all these cases; but at present we do not have to accomplish this object; what we can do is to systematically rid all patients with valvular disease of their ascertainable foci of infection (teeth, tonsils, sinuses); keep them built up with tonics and by persistent immunization.

In 1917 a compilation of the data in the records of the post-mortem examinations made in the three preceding years at Mount Sinai Hospital was made. These records showed that three-tenths of the deaths in cases of valvular disease was due to a superimposed infection by the streptococcus hemolyticus; in other words, to subacute streptococcic and influenzal endocarditis. When one takes into consideration the fact that this disease is one which occurs to the largest extent in young adults, and that it attacks mainly the patient with cardiac disease who is not suffering from cardiac insufficiency, the question of prevention appears the more pressing.

Prognosis: In a series of four hundred and nineteen cases compiled by Capps, which included the reported cases of Billings, Horder and Libman, there were twelve recoveries or less than three per cent. Two of the twelve patients who recovered received vaccines and ten no specific treatment.

Based on the experimental work of Allison on the effect of arsenical preparations,—salvarsan, diarsenal and arsenobenzol, — on streptococcus, Capps for the past twelve years has been giving his cases of subacute infectious endocarditis daily intravenous injections of sodium cacodylate, the dose varying from one to four grains. According to Allison "these preparations (salvarsan, diarsenal and arsenobenzol) possess a strictly bactericidal power against virulent strains of streptococci in vitro in dilutions up to 1 in 3000 and an inhibiting power for at least twenty-four hours in weaker solutions. They possess bactericidal action against streptococci also in the blood stream of experimental animals. They produce no untoward effects on animals where large doses are frequently repeated."

Capps' experience would seem to indicate that the sodium cacodylate injections are inhibitory rather than bactericidal and therefore should be given intravenously for a long period. Eight patients were treated with daily intravenous sodium cacodylate injections. Two patients died, and the observations over the six surviving cases extend over periods of eleven years and six months, five years and six months, five years, two years and six months, six months, and three months.

No conclusion can be drawn from the last two cases. The other four cases having remained in good health for two years or more may be classed as recoveries.

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DISCUSSION

George H. Heymann: Owing to the fact that the streptococcus viridans is the organism usually responsible for the production of endocarditis, if there exist foci of infection in the mouth in these cases such infective foci should be immediately eradicated. Valuable time should not be wasted in temporizing when foci of infection are found in the mouth.

A. P. Williams: The discussion brings to my mind the research work being done by the National Dental Association and research bureau in the interpretation of roentgen-ray films of the teeth and jaws. It has recently been demonstrated that we were mistaken heretofore in regarding large radiolucent areas at the apices of teeth as undoubted virulent foci of infection. It has been shown that in such cases nature has isolated the infective focus by the formation of granulomata thus tending to prevent systemic infection. Diseased teeth presenting little or no radiolucent areas are as a rule much more dangerous to the individual. Even in dead teeth presenting no radiolucent areas the streptococcus viridans is found in about eighty-five per cent of cases. For many years it has been the practice of dentists to remove the pulp tissue and fill the canals of dead teeth. Such teeth in many instances become virulent foci of infection. Failure to secure perfect results has been due to the fact that the pulp tissue was not entirely removed, the remaining portion furnished suitable soil for bacterial development and thus creating a focus of infection. While the teeth may not very often be the primary cause of endocarditis, they are a potent source of danger secondarily, and if the patient presents a cardiac or joint lesion there should be certainly no hesitancy about removing every tooth which shows evidence of disease—and this also includes dead teeth.

W. B. Owen: The remarks of Dr. Heymann and Dr. Williams regarding the mouth and teeth as foci of infection in endocarditis, arthritis, etc., remind me of a patient referred to me not long ago from central Kentucky because of persistent arthritis. The teeth had been suspected as foci of infection and had all been extracted; whether they were diseased or not I do not know, but I understand several roentgen-ray examinations had been made before the teeth were sacrificed. There was no relief from the arthritis and I wrote the physician who sent the patient to me that it seemed advisable to make some further roentgen-ray study to determine if possible the cause of the arthritis. After thorough examination of the jaws the roentgenologist found an abscess at the upper terminus of a tooth socket. The eradication of this afforded relief and improvement has continued.

I mention this as a pointer worth remembering where the teeth have been extracted and the patient still complains of joint pains showing that a focus of infection exists somewhere in the body.

A. P. Williams: Residual infection of the jaws, alveolar processes, etc. is not uncommon after the teeth have been extracted. During the extraction there is always considerable tissue cell destruction, adequate means of drainage may not have been provided, and the extensive vascular supply to the mouth and jaws causes the wound to heal quickly. It is surprising how many points of residual infection may sometimes be found to exist in making careful roentgen-ray investigation of edentulous jaws after extraction. Incision shows the tissues to be soft and mushy. I have seen many cases of this kind in which the streptococcus viridans was demonstrated in the area of residual infection.

S. G. Dabney: I can only recall one case in which endocarditis was attributable to a focus of infection in the tonsil. Dr. Baldauf saw that patient with me. The patient is a woman who had been under my observation for thirty years. She has had a great deal of ill health from causes unrelated to focal infection and has been operated upon several times during the last few years. She gives the history of numerous attacks of tonsilitis in former years, but during the last ten years she had no tonsilitis until the past autumn when she had an acute attack. Four weeks later she developed endocarditis so diagnosed by Dr. Baldauf. I was greatly interested in seeing the culture of streptococcus viridans which Dr. Baldauf isolated from the tonsil.

I agree with the advocacy of tonsillectomy whenever there is any doubt about the tonsil being the focus of infection. Even if a few normal tonsils are removed by following this plan little or no harm will have been done.

I do not recall having seen a case of endocarditis following sinus infection, but have seen several cases of arthritis attributable to sinus disease. One of them may be worth briefly reporting: A young man had frontal sinus infection and had been in many hospitals including Johns Hopkins. Every surgeon he consulted insisted upon performing an external operation to which he refused to consent. He was under my observation for some time and was finally cured by

intra-nasal operation, a free opening being made through the nose into the frontal sinus and drainage thus secured. During the time he was being treated a very severe anthritis developed. I have seen two or three other similar cases.

With further reference to sinus disease: A lesson was taught me today which seems of some importance. A young man, referred to me from a small town in Kentucky, was suspected of having sinus disease, but roentgen-ray examination was negative. His teeth had been thoroughly investigated and nothing abnormal found. Routine examination in my office yesterday failed to disclose a single symptom of sinus disease. The patient was sent to Dr. Keith for further roentgen-ray study, and he also reported there was no evidence of sinus disease. The man had come from quite a distance and did not wish to return home unrelieved, so I concluded to keep him under observation for a day or two longer.

When the patient came to the office this morning I placed him on the sofa, after thoroughly cleansing the nose, with head much lower than the body, and within a short time pus was seen under the middle turbinate. He had evidently cleansed his nasal cavities yesterday by blowing and in consequence both the clinical and roentgen-ray examinations were negative He remained in the office for about two hours, when the procedure was repeated, and again pus appeared in his nose

I mention this case simply to show that we ought not to be too hasty in concluding that sinus disease does not exist. Possibly I have overlooked cases of this kind. Had this man been allowed to go home yesterday the diagnosis of infection of the left antrum of Highmore would not have been made. It is important that patients suspected of having sinus disease be repeatedly examined. I have often cautioned them not to blow the nose before coming to the office in the morning, but in most instances the advice is disregarded. I believe it is wise to keep such patients under observation for several days and examine them under varying conditions.

Ben Carlos Frazier: I would like to ask Dr. Baldauf whether stock or autogenous vaccine made from blood culture is used in the treatment of endocarditis. I wish in closing he would also state what he regards as the positive symptoms of vegetative endocarditis, and tell us something more about the pathology of the disease and the prognosis.

Leon K. Baldauf: (closing): Dr. Frazier asks whether blood culture vaccine or stock vaccine is used in the treatment of endocarditis: Both stock and autogenous vaccines have been used. I think it was in 1908 that Billings reported fourteen cases of vegetable endocarditis, chronic and subacute, treated with vaccine prepared by Rosenow who was then working with him. I think the consensus of opinion is that vaccines in all forms, autogenous and otherwise, are practically useless.

It has been my experience, which includes the observation of between fifteen and twenty cases, that of all sources of infection the sinuses are probably the least important. The tonsils are next, and the teeth are the most important. In contradistinction to this, however, I recall a boy who had vegetative endocarditis, and the streptococcus viridans was isolated from his blood, yet he did not have a dead or diseased tooth in his mouth. He had previously suffered several attacks of tonsilitis, and pure culture of streptococcus viridans was isolated from the tonsil. In that case there was no question about the tonsil being responsible because he did not have a devitalized tooth in his mouth.

A rather interesting case was referred to me a few days ago from a small town in Kentucky. The patient was a man who had chills and sweats. He gave a history of having fever of 101 degrees to 103 degrees F. He had a leucocytosis of 12,000 to 13,000. We were certain that the patient had some infection because he had fever chills, sweats, leucocytosis and was frankly ill. It is in those cases where fever and leucocytosis persist and cannot be explained that one should examine the heart for a murmur which may be scarcely audible. As Billings has shown in some of his cases heart murmurs may not appear until very late in the disease; in some cases no murmur was detected and yet vegetations were found at necropsy in the walls of the heart. The boy mentioned had been treated six or eight weeks for typhoid fever and his physician could not understand why he did not recover. The man had a more or less septic temperature ranging from 98.5 degrees to 102 degrees F.; he had leucocytosis, 15,000 to 20,000 chills, sweats and every evidence of infection. The diagnosis of malaria had been made and large doses of quinine administered by his physician who could not understand why there was no improvement. I made a blood culture and isolated the streptococcus viridans; his heart was examined and a soft systolic well transmitted murmur detected. He afterward developed typical hemiplegia probably from cerebral embolus. We know that emboli often occur in the kidney and spleen in cases of vegetable endocarditis.

In regard to the pathology: It must be remembered that subacute differs from acute vegetative endocarditis such as seen following pneumonia, epidemic cerebrospinal meningitis, etc. Libman was the first to use the term subacute endocarditis which is now accepted by everybody. He has shown that in this form of endocarditis there is always a previous heart injury, and the virus that

has injured the endocardium in most instances is the virus of rheumatism. An article recently appeared in the American Journal of the Medical Sciences analyzing the reported cases to determine how many were due to the virus of syphilis. The consensus of opinion is that syphilis is seldom primarily responsible for this endocardial injury, the virus of rheumatism being the most common cause.

The most important features recently emphasized are: Given a man with an endocardium which has been previously injured by the virus of rheumatism, it is the absolute duty of the physician to remove if practicable every suspicious focus in that man's body because of the danger of implantation of this secondary focus in the endocardium which has been previously injured. It has been shown experimentally that active streptococci can be introduced into the circulation of an animal without producing endocarditis; but if the endocardium be first injured and the organism introduced an endocarditis results. In other words, the previously injured endocardium will be the site of vegetative endocarditis.

The observations of Libman at Mt. Sinai Hospital are of great importance: He says that three-tenths of all patients with valvular disease of the heart coming to necropsy in that hospital died from streptococcus viridans infection. In other words, three-tenths of these patients, which is a very large percentage, had streptococcus infection engrafted upon upon a previously injured endocardium. When I was doing necropsy work I recall having seen a number of cases of vegetative endocarditis. In one there was a strawberry-like growth around the cardiac valve which had become completely calcified.

The prognosis of vegetative endocarditis is exceedingly grave. In only twelve of the cases recorded were the patients supposed to have been cured; and we do not know whether they were cured or eventually died from the disease.

The method used by Capps of Chicago of injecting sodium cacodylate I think is worthwhile. It has been shown that arsenical preparations seem to inhibit growth of the streptococcus viridans. Some of patients treated by this method are living after eleven and a half years and may be regarded as cured.

The case referred to by Dr. Dabney was very interesting to me. The history showed that the women had in former years suffered numerous attacks of tonsilitis. She had an attack in October, 1922. Cultures were made from the tonsils and a pure growth of streptococcus obtained. I did not use blood media so did not know at the time whether it was streptococcus viridans or not. When I first saw the patient she had a peculiar rash with nodules just underneath the skin, her lower limbs were swollen and painful, etc., which we thought due to streptoccoci in the blood. It later developed that she had a cardiac murmur which of course solved the entire problem. Another blood culture was made and within forty-eight hours I had a beautiful growth of streptococcus viridans.

THE PRACTICAL VALUE OF PROTEIN SENSITIZATION*

By R. Hayes Davis, Louisville

By protein sensitization is meant that condition in which an individual is hypersensitive to a specific protein with the result, that when this protein enters the body, a reaction is produced which may manifest itself in various ways. This reaction is known as anaphylactic shock. The explanation of the reaction is that on a previous occasion the specific protein on entering the body resulted in the production of a certain number of antibodies, and when the same protein is introduced again as an antigen, the combining of this antigen with the specific anti-bodies results in the formation of some substance which is deleterious to the body. It is an easy matter to sensitize an animal by the injection of a foreign protein, but there is no satisfactory explanation why a human being may be sensitized to one protein and not to another, or why some individuals are sensitized and others are not.

Proteins may enter the body by inhalation, ingestion, absorption and infetion. In inhalation they enter with the respired air through any of the mucous membranes of the respiratory tract. If they are ingested they are taken into the digestive tract. They may be absorbed through the conjunctiva or at times through the skin. And they may enter the body through any kind of infection as a medium, but more frequently through some focal infection, like abscessed teeth, infected tonsils, infections of the respiratory or digestive tracts.

The proteins which result in anaphylactic reactions may be derived from any of the foods from the pollen of plants or trees or grass, emanations from animals, the proteins of bacteria and so forth. In fact the number of different proteins capable of doing harm is almost unlimited. The most frequent ones to produce symptoms in susceptible individuals are such common foods as eggs, milk, cereals, meats, chicken, potatoes and any other of the frequently used food supplies. The most common pollens are timothy, redtop and ragweed. Animal proteins such as horsehair or dandruff, cat hair and feathers should be tested as a routine. Then the bacterial proteins must be studied in many cases. The

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principal ones of these are staphylococcus, pyogenes aureus, albus and citrus, streptococcus, hemolysans and viridans, pneumococcus, types one and four, the diphtheroid bacillus, mirococcus catarrhalis. All these various proteins must be studied in each case, and those are selected which would most likely be the offending agent after a very careful history is taken of the patient. The various foods that he consumes are studied, as are also his contact with animals and plants with special reference to the season and the presence or absence of any possible source of infection.

After the proteins are selected which might be possible factors, these are tested out carefully. There are two methods of making a sensitization test. One is the intradermal method which is quite satisfactory, but is not so practical as the other method, known as the cutaneous test. In the former certain dilutions of the proteins are injected into the skin. This method is difficult to perform, and it is more painful; there is considerable danger of infection; there is danger of causing a severe reaction in a very sensitive individual; and frequent pseudo reactions occur. The cutaneous method is simple; it is entirely without danger and a large number of proteins may be tested at the same time with very little discomfort. This cutaneous method will be described in detail as this is the one almost universally adopted. The flexor surface of the arm is used. The method I use is to cleanse this skin area gently with soap and water and then apply alcohol and then wash this alcohol off with sterile distilled water and dry with sterile gauze. It is important not to irritate the skin in this cleansing process. It is usually recommended to use a scapel and to make small cuts about one-eighth of an inch long not deep enough to bring the blood, but I personally much prefer a von Pirquet borer. With this little instrument the scarifications can be made very quickly; they are all of the same size; and there is little chance of penetrating too deeply. A small amount of tenth normal Sodium Hydroxide is now put on the wound with a platinum loop and the powdered protein is removed from its small container with the flat surface of the broad end of a tooth pick and gently rubbed into the scarified area. It is of the greatest importance not to allow the protein from one bottle to come in contact with that of another as all accuracy would be destroyed. It is for this reason that tooth picks are especially useful as they can be thrown away immediately. The different tests are now carefully marked and at the end of a half hour the proteins are wiped off with sterile water and the readings made. A positive reaction consists of a raised white elevation or urticarial wheal surrounding the scarification. This elevation must be O. 5 cm. in diameter to be considered positive and the degree of positiveness is noted by a series of plus signs up to four. If the reaction is less than O. 5 cm. it is considered doubtful. In making every test it is imperative to have two control scarifications to which only the Sodium Hydroxide has been added without any protein. Occasionally a skin is so sensitive that even the controls show decided wheals, and in such a case, which is fortunately not frequent, the test must be postponed until a later date. The food and animal proteins are usually supplied in powdered form and keep indefinitely. The pollens however, are supplied in liquid form and can not be carried over from one season to another. My proteins have been procured from the laboratories of Squibb and the Arlington Chemical Company, but recently Parke, Davis & Co., has introduced a protein in the form of a paste which is squeezed from a soft metal tube. I have not yet had any experience with this product and I do not know how long it can be kept in the moist state, but if its stability is equal to the dry powdered proteins, it perhaps has some advantages.

We shall now take up the diseases which may be produced through the effects of proteins. The most important of these are asthma and hay fever. Eczema and urticaria and angioneurotic edema are not infrequently the result of protein sensitization, and at times perhaps certain gastro-intestinal disorders.

Asthma may be classified as asthma in which the individual is sensitive to proteins and asthma in which protein sensitization does not play a part. The latter may occur throughout the whole year or may be seasonal. This type is due to bacteria and is often spoken of as asthmatic bronchitis. The first type or the true asthma may also be seasonal or may occur throughout the year. The seasonal type is due to pollens and the all year type may be due to either animals, food, bacteria or a combination of any of the three. In any case therefore, if relief is to be expected from the distressing symptom complex, it is of imperative importance to make a correct diagnosis.

In the majority of cases to make a diagnosis of the causative agent is not as difficult as it would seem. When a careful history is studied the various points will usually direct the diagnostician in the right direction. If a patient suffers with his asthma periodically at certain definite seasons when vegetable life is pollenating, then it is obvious that the study must be made with the pollens that are common to that community. If he has his asthma at any time then a careful study of all the foods that he is eating must be made. It

is important that the regular diet be taken daily before the test, because if a particular food is omitted for some time the skin may fail to show a reaction whereas the same food if eaten may produce violent asthma. In this type of asthma the animals with which the patient comes in contact must always be studied, as a patient may be sensitive not only to certain foods but also to certain animal emanations at the same time. The same thing is true with bacteria. Their proteins may play an important part, and the ordinary bacteria should be carefully studied especially if there is a suspicion of an infection in any part of the body.

The age of onset of asthma is of great importance in the diagnosis. Four-fifths of the cases that developed asthma during infancy are sensitive to proteins; one-half of those that develop it in young adult life are sensitive; only one-fourth of those beginning with asthma later are sensitive; and none are sensitive who develop their first symptoms after the age of fifty. Therefore, nothing can be expected from protein sensitization after this age. The food proteins play by far the most important part in the very early cases. Eggs seem to be the most frequent food causing sensitization, cereals next, and then milk, but any foods may be responsible. I had one young child who was given cabbage daily. He developed severe asthma. He showed a most decided reaction to this vegetable and no reaction to any of the other foods that he was taking, and the elimination of cabbage from his diet resulted in a prompt cure. A little later the cereal proteins seem to be a more frequent cause. Still later eggs, milk and cereals are much less frequent causes than fish, meat and potato. One patient, a man about forty, was telling me that he suffered with violent asthma for years; after the removal of beef he was absolutely free from symptoms for over a year. He then tried a beef steak and suffered all night. After another year he repeated the experiment with the same results.

We shall now pass on to hay fever. Hay fever, like bronchial asthma, may be divided into a sensitive and nonsensitive type. Either may occur seasonally or all the year. The seasonal sensitive type may be due to the pollens from trees, grass or compositae. It may be due to food, bacteria or animal hair. The-all-year sensitive variety may be due to animal hair, food proteins, bacterial proteins or pollen proteins. The nonsensitive type, seasonal or not seasonal, is due to bacterial infection. In the all year variety changes in the mucous membranes, nasal cavities, various abnormalities, growths and infections in the nasal cavities and sinuses often play an important role. These typical cases are usually called by the rhinologist vasomotor-rhinitis.

The ordinary sensitive seasonal type of hay fever is the variety usually encountered, and this in most instances is due solely to the pollenation. There are really three varieties. During April and May there is a variety due to the pollen of trees. The most common of these are the willow, poplar, maple and oak. The variety is next followed by the season of May and June, during which the various grasses pollenate. This type of hay fever is erroneously called rose cold, although it is only in the very exceptional case that roses are a causative factor. The most frequent grasses to be studied are June grass, red top and especially timothy. The third variety of hay fever and the type that is by far the most important begins about the middle of August and extends into October. This hay fever is almost invariably due to ragweed. Other members of the same family may show positive sensitization tests, such as daisy, goldenrod, sunflower, golden glow and so forth, but these latter shed their pollen sparingly, and they are too heavy to float in the air. Therefore, they are not of nearly so great importance as the ragweed.

The atypical cases of hay fever are much more difficult to diagnose and the same line of procedure must be adopted as in the study of asthma.

In all cases of chronic or recurring eczema that do not respond to the usual treatments, protein sensitization should be carefully studied as some of the sufferers will be relieved by finding the specific cause of their ailments. The same is true with recurring of chronic urticaria or recurring angio-neurotic edema.

I have one very interesting case of a child with severe asthma who was sensitive to a number of foods, whose father suffers with asthmatic attacks and whose mother had for years chronic urticaria. Certain gastro-intestinal conditions too may in some instances be due to anaphylactic shock, and this should be borne in mind where there is a reason to suspect such a possibility.

The treatment of the individual who is sensitized consists in either removing the cause or in desensitization. Where the protein is one or more foods it is far simpler and more satisfactory to remove the offending article from the dietary. However, if a number of important foods are involved, there are some cases where it would be difficult to eliminate all the injurious ones. In this type of case, the attempt may be made of desensitizing by giving daily increasing amounts of the food to be used beginning with a very small quantity. This is of greatest importance in babies when milk is such an important part of the diet. In most cases however, to desensitize

by feeding the protein will be found difficult to carry out. It is more feasible then to change the diet in such a manner that the patient will secure his proper quota of carbohydrates, proteins and fats without receiving those that will cause him trouble. This subject of diet is of such importance that I am going to quote in detail the satisfactory discussion found in the article on Asthma in the Oxford Medicine.

"Patients who are sensitive to potato usually are able to eat baked potato even though boiled potato causes symptoms. Although raw milk may cause symptoms, boiled milk will not, and cream and butter, both of which practically consist of only the fat in milk, may be taken. Shredded wheat biscuits and thin slices of bread well toasted on both sides may be eaten, even though the patient is sensitive to wheat. The explanation for these variencies is that very high temperatures destroy the anaphylactic properties of proteins. Probably the only common food protein which cannot be treated is that of egg, because heat sufficient to destroy its anaphylactic property would render it non-palatable and indigestible. Furthermore not all of the individual proteins that constitute a food cause symptoms in the same person, and some individual proteins which do cause symptoms may not be present in certain food in sufficient amounts to cause symptoms; such examples follow. In rice the only protein present in appreciable amounts is oryzenin (six and five-tenths percent.); in oat, glutelin represents eight percent of the protein, whereas avenalin and prolamine each represent one and five-tenths percent or less of the protein; in corn, zein is the chief protein (five percent); in whole wheat, gliadin and glutenin each make up four percent; whereas in the embryo wheat, proteose, blobulin, and leucosin are present, respectively in three, five, and ten percent. The importance of doing skin tests with these individual proteins in the cereals is evident, and in the case of rice, if the patient were not sensitive to oryzenin he could probably eat rice without trouble, since the other proteins are present in too small amounts probably to cause trouble. Usually the same patient is not sensitive to all of the cereals, so that if wheat must be omitted other cereals may be substituted. Often patients are able to eat small amounts of the offending protein, whereas large amounts cause symptoms; this fact has been proven to be true by Schloss and Worthern and by Talbot, to both of whom reference has already been made. Schloss and Worthern found the gastrointestinal tract of infants to be permeable to undigested protein when taken in large amounts, and Talbot found a threshold below which the eating of protein caused no symptoms, but as the threshold was approached symptoms began to appear. These facts evidently apply to some adults, since the author, by doing bismuth gastrointestinal studies on patients who were sensitive to wheat proteins, found abnormalities in the tract, such as "ptosis, fixations, kinkings, and the like, which favor stasis and premature absorption at such points. Another added factor is the finding by Maurel that whole wheat bread is not digested and assimilated as well as that made from the intermediate grade of wheat flour bolted to seventy-five or eighty-five percent; the author's experience in asthma coincides with this view. Since some patients are sensitive to the amino acids, even these may cause symptoms. Therefore, for all of these reasons, and more especially because of the permeability and abnormalities of the intestinal tract and because of the sensitization with amino acids, omission of, or at least the careful feeding of the offending protein is by far the most reasonable treatment of food asthmatics."

In the case of animal emanations it will usually be found necessary to desensitize by hypodermic injections. To do this it is necessary to apply the skin test to various dilutions to secure the initial dose. If dilution of only 1 to 100 is necessary to cause a positive reaction it is hardly necessary to desensitize as it is usually easy for the patient to avoid close contact with the animal.

With bacterial sensitization the focus of infection should of course be removed if possible, and vaccines used in the treatment, preferably autogenous ones where it is possible to secure them.

In pollen sensitization unless the individual can remove himself from the locality where the offending element exists, it is necessary to desensitize by hypodermic injections, again finding the initial dose by skin testing with various dilutions and gradually increasing the strength. This must be done very cautiously as too large a dose will usually very quickly bring about an anaphylactic reaction.

In the treatment of pollen conditions, it is always infinitely better to begin the treatment long enough before the pollenating period to produce an immunity before the individual becomes subjected to these deleterious substances. By this line of treatment very satisfactory results are secured in quite a large percentage of the cases of hay fever and pollen asthma.

EXOSTOSIS OF TIBIA: OSTEOMYELITIS. CASE REPORTS.*

By Guy P. Grigsby, Louisville

Case I. R. W., female, white, aged ten years (October 1st, 1921): One year ago a swelling was noticed just below the right knee on inner side. Roentgen-ray examination revealed an exostosis. As the growth was symptomless its removal at that time was not advised. Three weeks ago she struck the knee over site of exostosis; this was followed by considerable pain and swelling which subsided under hot applications. She was referred to me by the family physician for removal of the bony growth.

Examination showed a perfectly normal girl of ten years. There were no other abnormalities nor were any other exostoses found. There was still some pain over the growth but the swelling had nearly subsided.

Roentgen-ray examination (Drs. Keith & Keith) showed an exostosis attached to the upper and inner side of right tibia about size of thumb and two inches long; there was a distinct fracture in its middle. In view of the present injury and the probability of its again being injured removal was advised.

Under local anesthesia (½ per cent novocaine) an incision was made exposing the growth which was then removed by chiselling from its tibial attachment. Removal was easily accomplished with little complaint from the patient. The wound healed without infection. The child has had no discomfort since the operation, and returned to her studies at the end of one week.

Case II. J. J. M., male, white, aged seventeen years (October 15, 1922): About three months ago while running the patient fell and injured his right knee. He complained of pain for a few days but soon recovered except for pain on inner side just below the joint; this was especially marked when he attempted to run or walk rapidly. The knee was strapped by the family physician which afforded relief so long as the dressing was left intact. During the last two weeks pain has again increased and the boy walks with difficulty. He was referred to me for advice as to treatment.

The patient was perfectly normal except for the knee condition. There was slight synovitis of right knee. Movements were free and painless except for an area over upper end of tibia. He says he "thinks a tendon slips over something sharp on inner side of knee and this causes his pain."

Examination of the area revealed a growth from the inner and upper end of the tibia about the size of a little finger which evidently terminated in a sharp point. Movement of the knee caused slipping of a tendon or ligament over this growth. Roentgen-ray examination (Drs. Keith & Keith) showed an exostosis as described. Its removal was advised.

Under local anesthesia (½ per cent novocaine) the growth was exposed and the knee moved with the wound open. The internal lateral ligament was seen to slip over the growth with a distinct snap. The growth was not large but extended directly outward from tibia and the tip was very sharp. The exostosis was removed by chiselling from the tibia. The wound healed without infection; the patient was kept in bed for one week; the knee was then strapped with adhesive and he was allowed to go about on crutches. He complained of some pain for the first few days after starting to use the knee. He is at present going about without any support. The effusion has disappeared from the knee. Movement of the knee to full range is without pain.

Case III. A. C., male, white, aged fourteen years (July 18th, 1922): Two weeks ago this patient was seen by Dr. Sam P. Myer because of a small furunele over the right patella. Hot applications of magnesium sulphate were used and there was marked improvement within the course of a few days. Five days later Dr. Meyer was again called and found a painful swollen area the size of a small lemon over the outer side of the upper end of right tibia. The patient's temperature was 100 degrees F. and pulse 100. He did not seem very ill and Dr. Meyer thinking an abscess was forming again ordered hot applications. There was little change in his condition during the next two days. Pain then suddenly increased, the temperature rose to 102 degrees F., and his appearance and general condition became much worse. Dr. Meyer asked me to see the patient and open the abscess. When I saw him the next day his general condition was such that I advised his removal to the hospital. The possibility of osteomyelitis of the tibia was considered, but as no especial tenderness could be elicited over the tibia or fibula (except over the swollen area) we thought we were dealing with a localized abscess. The patient was removed to the Jewish Hospital.

Under local anesthesia (novocaine) an incision was made over the swelling and about two ounces of bloody serum streaked with pus evacuated. A finger introduced into the cavity showed that it extended around the fibula, and from the roughness of the bone, we at once realized that we were dealing with osteomyelitis of the fibula. The wound was drained. Roentgen-ray examination that

*Clinical report before the Louisville Medico-Chirurgical Society, November 24th, 1922.

afternoon (Dr. Bayless) showed involvement of the entire shaft of the fibula except the lower end. With this knowledge I again examined the boy and was unable to elicit any pain or tenderness over the shaft of the fibula. I was forcibly impressed with the difficulty in making a diagnosis in this case without careful x-ray study.

The next morning under ether anesthesia (Dr. Long) an incision was made over the entire length of fibula in the tibio-fibular septum. The fibula was exposed and the peroneal nerve pushed aside. The whole upper end of the fibula was necrotic, the periosteum completely destroyed for two inches at upper end. The remaining periosteum was split, the bone severed just above the internal malleolus, and the entire shaft including the head removed subperiosteally. The wound was cleansed of blood and the incision closed, three small wicks of rubber tissue left as drainage.

Following the operation the temperature subsided to normal at once. The drainage was removed the third day; there was slight discharge from the upper end of wound for about ten days. The balance of the incision healed nicely. Pathological report (Dr. Stuart Graves) showed chronic, purulent osteomyelitis.

The patient was dismissed from the hospital in three weeks with the wound entirely healed and in splendid condition. At the end of three months roentgen-ray examination (Dr. Bayless) shows a splendid effort on the part of nature to effect regeneration of the fibula, and I think if you will study the picture you will agree that "it looks like she will complete the job."

DISCUSSION

J. Garland Sherrill: I wish to speak particularly of the last case reported by Dr. Grigsby: My experience has been that osteomyelitis of the fibula is rather rare, and that the diagnosis is not always easy without careful roentgen-ray investigation. The roentgen-ray is of great diagnostic value in all inflammations of bone.

The work that nature does toward restoring the shaft of the tibia and fibula after excision is exceedingly good, and in the case reported sufficient bone will probably eventually be regenerated to give strength to the leg. It seems to me, however, that after excision of the fibula the patient should be carefully watched by the surgeon for a considerable time to see that no deformity results. Eversion of the foot is not uncommon after excision of the fibula.

Guy P. Grigsby (closing): In the first case reported the exostosis was symptomless until after the child sustained an injury; she then began to suffer considerable pain. This was considered sufficient warrant for removal of the exostosis, which, as stated in my report, was easily accomplished under local anesthesia.

In the second case the boy described the cause of his symptoms in a very graphic way. After the incision was made movement of the knee caused the internal lateral ligament to slip over the sharp bony projection which was present. The entire growth was no longer than a finger but the upper extremity was sharp and movement caused severe pain as the ligament clipped over it.

The third case was regarded as particularly interesting because of its comparative rarity. It is the first case of fibular osteomyelitis that has come under my observation. Investigation of the literature shows that in the majority of instances osteomyelitis of the lower extremities involves the tibia and femur. In only three per cent is the fibula affected.

It is also interesting to observe what nature has done toward repairing the defect. I believe within three or four months there will be complete regeneration of the fibula. Fortunately the lower end of the bone was not involved and we were able to preserve the external malleolus. For that reason I do not fear that there will be any deformity.

IMMUNITY AND THE INFECTIOUS DISEASES.

J. S. Chambers, Paducah.

That all species of the animal kingdom are not equally susceptible to the different infectious diseases is a fact which has long been known. Each species has to a greater or less extent its own group of infectious diseases. Not only do we have this natural or inherent immunity of species, but there is marked difference in the degree of susceptibility of different races of men to the infectious diseases. And further, families, individuals in the same family, and the same individual at different ages and under different conditions, differ in susceptibility to infections.

There are many factors which may determine this natural or inherent immunity of species, race, family and individual, and there are many other properties which we suspect of being determining factors. Pasteur's classical experiments with anthrax in the chicken illustrated how high body temperature protects against that disease, and how a cold bath reducing the temperature of the chicken enables infection to occur. The difference in character of the skin of the different races of man is a factor influencing the susceptibility to, or the course of, many infections. The general condition of the body, such as fatigue, nutrition, emotions, etc., are factors in individual susceptibility. The anatomic,

physiologic and physico-chemical characteristic of the host, then, must be suited to the invader in order for infection to occur. Thus each infecting agent has its own realm of hosts, e. g., typhoid bacilli attack only man; and in nature does not disturb the lower animals. And not only does the infecting agent have its realm of hosts but it even shows a marked predilection for certain types of tissues in its hosts.

The last two score years have given us practically all the exact knowledge we have as to etiology, epidemiology, prophylaxis, specific therapy, exact tests etc. of the common infectious diseases. Specific acquited immunity as we have it today is a direct result of the work of Pasteur. We recognize that there is a group of infections one attack of which will protect against future attacks, and on the other hand there is a group one attack of which will not protect future attacks. In both instances an injury occurs against which the body reacts. The injury is probably some disturbance, chemical or physio-chemical in nature of the body colloids, and, so far as we know, the body reacts in the same way in each instance. But in the case of the infections giving protection against future attacks there is something more than a reaction to an injury. We might illustrate by saying that the factors entering into the production of an active immunity such as typhoid are: Reaction plus X, the X being a specific, lasting change which we call immunity, whereas in pneumonia there is reaction plus O. In line with this view it would seem possible to explain some of the clinical results obtained by injections of non specific substances such as horse serum, milk, autogenous serums, vaccines, kaolin and other colloids. It would seem that the injury is augmented and the reaction is made more severe and thus recovery hastened. It was long thought that only the protein of the bacteria cell stimulated the production of immunity, but it has been shown that the fats of the cell, as well, enter into the mechanism, if not in fact play the leading role, in the production of specific immunity. Wardenx combined the fats derived from certain bacteria with colloids and even with kaolin and with this produced a lasting specific immunity in animals.

In this group giving a specific immunity there is a sub-group in which we are able to transfer the immunity from one individual to another.

In this group the organisms produce a soluble toxin capable of separation from the bacteria cell. This toxin is produced in quantity, separated from the cells, injected into large animals and an anti-toxin of very high titer produced.

Now let us examine the type of organism. In general the organisms producing the most dangerous toxins give the highest immunity and of these the only ones that are known are bacilli, namely, diphtheria bacillus, tetenus bacillus, botulinus bacillus, Welch bacillus. There is agroup of infections giving acquired immunity whose etiology is unknown. They are such infections as measles, scarlet fever, chicken pox, smallpox and rabies. In measles and scarlet fever the immnnity has been transferred from one individual to another, but it has not yet been made practical and is not on a commercial basis.

In the group of infections which give active immunity but in which we have not yet been able to transfer the immunity there are the typhoids, anthrax, dysentery, malta fever, cholera and whooping cough. These do not, to our knowwledge, give soluble toxins. They are all bacilli and the immunity is probably not so strong or permanent.

There is a group in which we are uncertain as to the extent of specific immunity produced by an attack. In that group there are such infections as tuberculosis, leprosy, syphilis, malaria and influenza. These organisms are atypical bacteria, protozoans spirochetes and unknowns. One attack protects, if at all, very slightly, against future attacks.

There is still the group of infections which do not produce protection by one attack. They are mostly cocci, and the injury produced by them and the reaction may be compared to that following the injection of foreign colloids.

The practical application of our knowledge of immunity and the infection is still very much debated. It is safe to say that in the group of infections one attack of which will protect against future attacks, prophylactic immunization is logical. And in most instances we are able to do this either practically or academically. In the group of infections in which immunity, if it exists at all, it is very feeble, it does not seem logical to expect specific immunization, and as a matter of fact, we do not have today in this group a single instance of immunization of unquestioned value.

Specific therapy is likewise a much discussed question, and I believe that specific biologic therapy today is limited to the group of infections in which we have been able to transfer the immunity from one individual to another. There is a fertile field of endeavor in the extension of specific biologic therapy to the whole group of infections giving specific immunity. It is also possible

that there is a field for advancement in the group of infections which give little or no specific immunity, by means of non specific reaction. There is also a very great field here for advancement in specific drug therapy. With the advances in our knowledge of the infection have come many laboratory aids to diagnosis. In practically all infections of known etiology we have laboratory tests or examinations which for the most part, when in good hands, are reliable.

Then in the practical application of our knowledge of immunity let us not expect to protect against an infection when an attack of the disease itself will not protect against future attacks. Also in the treatment of these infections let us not expect results from stock preparations of vaccines, serums and whatnot except as they augment the reaction and possibly sometimes give temporary improvement.

THERAPEUTIC ABORTION.*

By L. C. Redmon, Lexington.

Therapeutic abortion may be defined as the artificial interruption of pregnancy in the interest of the mother.

In the limited scope of this paper only essential facts will be discussed with special emphasis on the indications.

It is evident that the operative indications are not as well understood as they should be, for we have on the one hand too much haste and on the other too great delay.

Therapeutic abortion should never be performed by any physician, except after very careful consideration of the indications, with competent consultants.

In considering this subject I shall interpret the term "abortion" to mean interruption of pregnancy before the period of viability, and shall not discuss the induction of premature labor. Induction of abortion, then, is performed solely in the interest of the mother, the life of foetus being disregarded.

So with these facts in mind let us consider the indications.

The indications may be classified under the following heads:

(1). Pathologic conditions directly due to pregnancy.

(2). Maternal diseases aggravated by pregnancy.

(3). Certain local pelvic conditions.

Of the pathological conditions directly due to pregnancy, the most important is some form of toxemia. It may manifest itself in pernicious vomiting, with marked acidosis, or it may be in the form of a progressively increasing kidney disturbance with marked albuminuria, high blood pressure, oedema, etc. These two types of toxemia are the most common conditions that justfiy the interruption of pregnancy.

The question arises—how far shall we carry these cases before interfering; just what is the danger signal? This question is sometimes very difficult to answer, especially in pernicious vomiting.

Although a considerable number of cases are improved by treatment, it must not be persisted in, if the patient does not show signs of improvement within a few days.

If the acidosis, as shown by daily urinalyses, does not improve; if coffee-grown vomiting occurs; if the yellow staining of the skin and sclera grows deeper; if the blood pressure falls daily and if the urine becomes less in quantity and higher in specific gravity, then all temporizing methods should be stopped and the uterus emptied at once. Too many women are carried on from day to day on one method of treatment or another, until they are too weak to survive the abortion. A case of late interference with the pathetic death of the young mother has been enough to impress the danger of too late interference upon the mind of the writer.

Under this classification we might mention acute hydramnios, and incarceration of the uterus that can not be relieved without emptying the uterus. These conditions are very rare and are only mentioned in passing.

Under the second heading, "Maternal diseases aggravated by pregnancy," we have primarily heart and kidney lesions and tuberculosis of the respirataory tract. Some authors are very positive in their opinion that no woman with an active tuberculosis should be allowed to continue in the pregnant state, while others claim that it is not the disease itself, but the acute exacerbations and complications that occur in its course that should set the indications. The general well-being of the patient, along with physical signs, on examining the chest, should determine our final decision. A competent internist should be the consultant always in these conditions. In diseases of the heart, the question is one of compensation. When symptoms of lack of compensation appear, the life of the patient is certainly in danger and if prompt relief is not brought about by medicinal treatment, the uterus should be emptied. I know of no more distressing or dangerous complication of pregnancy at or near terms, than a non-compensatory heart lesion.

*Read before the Kentucky State Medical Association, Paducah, October 16, 17, 18, 19, 1923.

In kidney affections existing previous to and aggravated by pregnancy it is comparatively easy to decide when to interfere. Certain nervous conditions, such as chorea of pregnancy (apparently toxic in origin) if not quickly relieved demand interruption. Also melancholia or delusional insanity may require interruption for relief of the mental condition.

The third group of indications is certain local pelvic conditions in the mother. If a woman has a carcinoma of the uterus in its operable stage, so important it is that the cancer be removed early that pregnancy should be disregarded entirely. If the carcinoma is inoperable, then the life of the foetus deserves consideration.

Before the days of the safe Cesarean operation there were many local conditions in the pelvis and birth canal that demanded interruption.

Contracted and deformed pelves, fibroid tumors and ovarian cysts, that are likely to interfere with delivery, making a Cesarean section necessary, were considered a justification for the early interruption of gestation.

With the present low mortality of the Cesarean operation, even when coupled with a hysterectomy, these are not now considered an indication, except when the general condition of the patient makes her an unsafe surgical risk for any abdominal operation.

METHOD OF INDUCTION OF ABORTION

Many methods have been advanced and discarded as being dangerous, too slow or ineffectual, among them the many uncertain drugs.

The two-stage operation is the best procedure, especially as most of these cases are primipara. The technique is as follows: Under sterile conditions, without an anesthetic, the cervix is packed with a narrow strip of gauze. This tends to soften it and makes the instrumental dilatation of the second stage possible. In pregnancy past the third month the membrane may be ruptured; this relieves the intra-uterus tension and tends to spontaneous abortion. The patient is prepared for dilatation and curretage twenty-four hours after the initial packing. The operation can and should be done under gas-oxygen anesthesia, as chloroform is contra-indicated, especially in the toxemias—ether is fairly safe and may be used if gas-oxygen is not available.

The patient is placed in the lithotomy position with the usual preparations, and if the dilatation is not sufficient, it is completed with graduated sounds. Branched dilatation should not be used, because of the possibility of tearing the softened cervix. The products of conception are then removed with a small sponge-holder, or if the dilation is sufficient, with the gloved finger. No sharp instrument should be used within the cavity.

As most of these cases are in extreme condition, packing of the uterus, after thoroughly cleansing it, is advisable to prevent excessive bleeding.

One thing should be borne in mind in the conduct of these cases. It should be generally understood that the Catholic church does not admit of the interruption of pregnancy before viability in a member of its faith, or in a Catholic institution. There is absolutely no exception to this rule. Both time and the patient may be saved by bearing this in mind.

In conclusion the writer would like to again emphasize the fact that no abortion should be performed by any doctor except after careful consideration of the indications with competent consultants.

Early Diagnosis of Syphilitic Chancre.—Hudelo emphasizes the importance of early recognition of syphilis for the abortive treatment. In every case of soft chancre one should suspect syphilis. The seroreaction is necessarily negative in the stage (except for some possibilities with the use of serum from the lesion), but the presence of spirochetes is decisive, and should be looked for every day or two; by 0.5 to 2 mm. deep scarifications, followed by expression of the serum. The border between the lesion and the healthy skin may be crowded with spirochetes. The diagnosis before the tenth day of the disease should be the rule, not the rare exception.

Kolmer Modification of Wassermann Test.—The results of tests on 1,014 serums examined in parallel series by a routine method of complement fixation and by the Kolmer modification of the Wassermann reaction are recorded by Kilduffe and the findings tabulated and discussed. The Kolmer method is favored because the results with this method are in close agreement with the clinical findings in a high percentage of cases. It is a strictly quantitative method and as such better adapted to the study of treated syphilis. It appears to be eminently worthy to supercede and supplant the methods now in common use. It presents by far the most acceptable technic yet proposed for adoption as a standard method and as such should be subjected to extensive, exhaustive and impartial trial and study. In early primary syphilis the Kolmer modification gives earlier and stronger results than routine methods.

Id.—Palmer and Gibb also favored the Kolmer quantitative complement fixation test for syphilis.

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ANNUAL MEETING, CRAB ORCHARD SPRINGS, SEPTEMBER 17, 18, 19, 20, 1923

COUNTY SOCIETY REPORTS

Nicholas: Nicholas County Medical Society met at the Court House at 2:00 p. m. April 4, 1923.

Members present were: Drs. M. Dills, T. P. Scott, O. S. Kash, C. W. Kash, L. B. Holmes, L. K. Swango, J. Cray Martin, B. F. Reynolds, and W. H. Martin.

Minutes of the last meeting (March 29, 1921) were read and approved.

T. P. Scott resigned as Secretary.

W. H. Martin was elected President.

L. K. Swango, Vice-President, and Dr. C. W. Kash, Secretary.

O. S. Kash was elected as delegate to convention, B. F. Reynolds, alternate.

C. W. KASH, Secretary.

Bullitt: At a meeting of the Bullitt County Medical Society held at Shepherdsville, December 28th, 1922, the following were elected as officers for the year 1923: President, G. W. Kirk; Vice President, R. J. Kerr; Secretary Treasurer, R. L. Hackworth; Delegate, T. E. Craig; Alternate, S. H. Ridgway; Censors, T. E. Craig, Tydings and Hill.

R. L. HACKWORTH, Secretary.

Malignant Endotheliomas.—Three cases are reported by Busman of tumors whose cellular elements present the histologic characteristics of endothelial cells. The clinical course of the lesions, in general, is that of tumors of slow growth, often developing at sites of trauma. Metastasis does not appear until late, when the tumor has reached considerable sze. The tumors in all cases exhibit a marked hemorrhagic tendency. Clinically, the lesions must be distinguished from syphilis, carcinoma, sarcoma, sporotrichosis and the infectious granulomas. The histologic structure of the tumors is that of an undifferentiated polymorphic cell type of growth presenting a whorl arrangement of the cells with the formation of elongated strands and narrow trabeculae. There is definite evidence of an attempt to differentiate into vascular structures. A constant feature is the occurrence of vacuoles in the cytoplasm of practically all cells. Treatment consists of radical surgical removal of the original process followed by use of the roentgen ray or radium application to the site of the original lesion and to all probable areas of metastasis.

Blood Crisis After Constriction of an Extremity.—Calve observed typical hemoclastic crises inin some patients after constriction of an extremity. He used the method clinically to preserve against shock (injection of serum, colloidal metals, arsphenamin). For this purpose it is recommended to make the constriction ten to fifteen minutes before the injection. It has also a desensitizing effect.

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EDITORIAL

CRAB ORCHARD SPRINGS

A pleasant forerunner of the Crab Orchard Springs meeting of the Kentucky State Medical Association, September 17th to 20th inclusive, was the meeting of the Tri-County Medical Society, composed of Lincoln, Garrard and Rockcastle counties at the Springs in May. Every physician in the three counties was present. A remarkably interesting scientific program was given.

There will be adequate entertainment for all of the Kentucky physicians and their wives who will attend the September meeting. The hotel has recently been remodeled and can easily accommodate six hundred guests. There is a splendid golf course which is in charge of a very excellent professional. The program is developing rapidly and will be the best we have ever had. The annual orations will be given by Dr. Hugh Cabot, Chief of the Medical Department of the University of Michigan, and Dr. J. G. Kennedy, of Detroit, the distinguished Chairman of the Special Committee on Medical Legislation of the Michigan State Medical Association.

Any member who desires to do so may drive to Crab Orchard. Arrangements have been made for caring for as many cars as come in. While there are a few bad stretches on nearly all of the roads, they are no worse than those we Kentuckians have accustomed ourselves to driving over at home, and there will probably be the record attendance in antomobiles.

We trust every member of the Association will be making his arrangements to be present at Crab Orchard for the most important meeting of the Kentucky State Medical Association since it was organized in 1851.

THE FORD HOSPITAL

No man in the history of the United States loomed more largely in the public eye than Henry Ford, the Detroit manufacturer of "flivvers." Had he done no other thing than develop the universal car, he would have been a public benefactor, but he appears to have a largeness of soul and real desire to serve humanity that is the quality which is making him one of the most respected men in the world.

The editor of the Journal had the privilege recently of going through the Henry Ford Hospital in Detroit with the Chief of its Medical Staff, Dr. McClure. There he found probably the most perfectly appointed medical service which has yet been developed. The diagnostic section is largely modeled on and improved from the Mayo Clinic and is as nearly perfect as modern science can make it. Each patient has an absolutely complete examination of every organ of the body. When this examination has been completed the appropriate treatment is begun and carried through. Combined with the highest development of medical science there is a social sympathy which is quite remarkable. Treatment is carried to the nth degree. The after treatment following operation is continued either in the hospital or has outdoor treatment until the patient is either restored to his or her former normal condition or is rehabilitated and trained to do effective work in the new condition in which they find themselves. Patients who are ill in their homes in Detroit may be visited by the hospital staff and if home treatment is desirable or advisable it is carried out in the same thorough manner, but most cases are hospitalized where any sort of complicated treatment is necessary.

The Journal suggests that physicians desiring to establish hospitals in Kentucky or to make changes in them should visit the Henry Ford Hospital at Detroit where they will be able to secure as good an experience in the entire field of medical science as the surgeons have for many years been able to secure at Rochester.

The policy of the Ford Hospital is to develop dependence upon the general practitioner for simple cases and *pari passu* to give everybody the benefits of the latest development in medical science in complicated cases. It seems apparent that Mr. Ford will make as notable a contribution to the development of social and scientific medicine as he has already done to vehicular locomotion.

A NOTABLE PROMOTION

In Kentucky, local self government has long been recognized. No more notable example of this has been shown than the recent selection of Miss Jessie O. Yancey as the head

of a social welfare and health department in the rural schools and community of Fayette County.

Miss Yancey needs no introduction to the profession and people of Kentucky. If her reputation had only been based on her remarkably successful campaign for the consolidation of schools in Mason County, it would have been a permanent one in Kentucky. Her work there was recognized all over the nation and, as county school superintendent in Mason County, she built a strong public opinion which has maintained one of the most successful county health departments in the United States since. Following this, Miss Yancey became educational secretary of the Kentucky Tuberculosis Association but after a short time, also, an assistant to the Director of the Bureau of Tuberculosis for the State Board of Health. In these two joint capacities, she developed a leadership that has been recognized all over the State. Nearly half a million children have become health crusaders through her co-operation with the common school teachers of Kentucky. No other single piece of health work has done more to advance personal hygiene, promote health habits and community sanitation than this campaign.

The work which Miss Yancey will do in Fayette County will be in very close co-operation with the recently created all-time health department for Fayette County and will be done jointly with the Extension Department of the Kentucky University. The entire medical profession of Kentucky will look forward with eager anticipation to this remarkable campaign started in Fayette County and we trust its beneficent work will be extended to other counties in Kentucky so that health can be made as contagious as disease used to be.

MODERN OBSTETRICS AND THE SAVING OF MORE MOTHERS

The object of the Shepherd-Towner Bill is the promotion of better care for mothers and babies. America has been very active among the Nations in the reduction of infant mortality, and she is now making great strides towards her goal of "a chance for health for every child." But, we have fallen far behind all the other great Nations in the safeguarding of our mothers. According to statistics gotten out on last mothers' day by the American Child Hygiene Association, we lost 18,000 mothers in 1921 in child-birth, which places us 19th among the great nations of the world. So great is our death rate from eclampsia and infection that child-bearing as a cause of death among women between the ages of 15 and 45 remains the most frequent cause of death, with the one exception of tuberculosis.

Towards the remedy of this deplorable state of affairs, we have three routes of approach:

1. The public education of our mothers to demand more frequent prenatal care; cleaner deliveries, and more thorough over-sight during the puerperium.

2. The better obstetrical training of our medical students while in college.

3. The banding together of our practicing physicians for mutual help in solving their obstetrical difficulties.

We have made already much progress along the first two routes, but the last road is the most difficult to open up. Our doctors for the most part have had to work single handed. They have kept poor records, or none at all, and even our Hospital records leave much to be desired. Thus, it comes about that the experiences of one man have profited that man alone and have not been passed on to be shared by his fellow practitioners for the greater safety of all our mothers.

The State Board of Health has considered the matter of obstetrical records of such vital importance that it has placed a registrar in the maternity department of the Louisville City Hospital. By her aid there will be assured a complete history of every obstetrical case delivered in this Hospital—the natural obstetrical center of the State.

Dr. Alice N. Pickett who has been in charge of the prenatal clinic for four years and who is one of the visiting staff of the Hospital has consented to edit each month an obstetrical column in the Journal. In this column Dr. Pickett will record every case delivered in the Hospital. Each abnormal case will be taken up separately. The complications, the line of treatment and the results will be given with perfect frankness. In this way we hope to make the work done in the Hospital profitable to the doctors of the State, as well as to those who are actually doing the work. Through this column we hope to stimulate so much interest that we may open a round table of discussion of obstetrical questions with all the doctors of the State taking part. At each State Meeting we may look forward to having an hour devoted to a discussion of the cases reported, all the general practitioners participating.

SCIENTIFIC EDITORIAL

OBSTETRICAL COLUMN

Edited By ALICE N. PICKETT

Director of the Prenatal Clinic Louisville City Hospital.

As an introduction to this column, it may be well to describe the work done in the prenatal clinic: The patients assemble in the waiting room. Each new patient is taken into a booth and her history taken, especial emphasis being placed on tuberculosis, syphilis, nephritis and previous pregnancies. She is next taken into a second booth where the Junior Obstetrical Interne takes her blood pressure and a blood specimen for a Wasserman test. If the systolic pressure runs above 130 and no other cause, such as hyperthyroidism, is found to account for it, she is considered a pre-eclamptic case and is at once put on a very simple and effective routine. She eats no meat, eggs, cheese or dried beans for one week and takes a dose of salts every morning, returning to clinic after the week, bringing a specimen of urine. The pressure usually falls gradually and rarely does the urine show either albumin or casts. The blood pressure gives the warning from a month to six weeks before the urine shows any abnormal change. In 1800 cases we have had only one case under the care of the clinic to develop eclampsia and we all believe that this one could have been prevented, had we maintained our routine a little more rigidly. This patient had only two convulsions and both mother and child were saved. We believe eclampsia to be a preventable disease in almost every instance. We may be able to prove, when we can number our patients by thousands, instead of by hundreds, that all eclampsia is preventable. If a patient does not do well at home, we try to induce her to come into the Hospital for a few days, though this is rarely necessary.

A Wasserman test is made for each new case and those suffering from syphilis are at once put under Salvarsan and Mercury in Dr. Young's clinic. It will be interesting to watch the record of these cases as to abortion, miscarriages, weight of the baby, foetal death, etc., comparing them with the syphilitic cases receiving no prenatal venereal treatment. Dr. Young is establishing a clinic in which there will be treated only prenatal cases and syphilitic mothers and children.

Next the patient is brought to the examining table. Here she is looked over as to teeth, throat, goitre and heart. She is instructed in the care of her teeth and if necessary, referred to a dentist. A careful lung history is taken. If this is significant, or her appearance indicates tubercular infection, she is sent to the anti-tuberculosis clinic for diagnosis and treatment, if necessary.

Her abdomen is examined and the fetus outlined. We have been able to correct many abnormal positions by external manipulations, the corrected position being maintained by strapping the abdomen with adhesive. In the case of the primipera, if the baby's head does not fit snugly down into the pelvis during the last month of pregnancy, we are prepared for trouble at the time of delivery.

The pelvic measurements are next taken and a prognosis as to the character of labor written in the chart. If the measurements are not satisfactory, the chart is stamped in red ink "no vaginal examination after the patient goes into labor." For such cases, the examinations by the internes are done abdominally or per rectum the vagina being left uncontaminated so that a later difficult forceps delivery or a caesarean section may be done with the lesser risk of infection. We are always interested to watch how nearly these prognoses prove correct at the delivery table. We are frequently pleasantly surprised to find a small baby, with good head molding being driven down through a contracted pelvis without difficulty. So often has this happened, that it has become the policy of the department to give *every* woman the test of labor before interference is definitely determined upon. On the other hand, we very rarely encounter any considerable difficulty at delivery in a case where we have had no reason to anticipate trouble during the prenatal period. Smears are taken from the cervix and urethra and examined for the gonococcus.

We have found our x-ray pictures taken by Dr. Turner of great value in making an early diagnosis of pregnancy and in ascertaining foetal positions, where the abdominal findings were obscure.

Each patient is instructed to rest a part of each day lying down, to eat plenty of fresh vegetables and fruits, to drink at least eight glasses of water per day and to take a long walk out-of-doors each day. She returns to clinic every two weeks until the beginning of the eighth month. During the last two months she comes each week. At these subsequent visits she has her urine examined, her blood pressure taken, the foetal position outlined and general instructions given as to hygiene. If for any reason her condition is not considered satisfactory, she is advised to enter the hospital for observation and care.

Obs. Serv. Lou. Cty. Hosp. 4-14-23 5-10-22 Dr. P. C. Neely Int. Dr. Ext. Herman Mercer

Hospital Deliveries

No.	Reg. No	Para.	Care P. N.	Character of Pelvis	Blood Pressure Rate	Wass.	Character of Dely	Pos.	Wt. Baby	At Term	Fate of Baby	Lac.	Result of Repair	Cond. on Discharge
1.	1437	2	Clinic	Normal	Normal	Neg	Spontaneous	L. O. A.	5.0	Yes	Living	None		Good
2.	49629	1	Clinic	Gen. Contr.	Normal	Neg	Spontaneous	?		Yes	Lived 2 hrs.	None		Good
3.	49618	1	No	Normal			Spontaneous	L. O. A.	5.14	Yes	Living	Episiotomy	Imperfect	Refused Operation Good
4.	49667	1	Clinic	Gen. Con. Mild	Normal	Neg	Spontaneous	L. O. A.	6.10	Yes	Living	2nd Degree	Good	Fair
5.	49664	1	Clinic	Normal	Normal	Neg	Spontaneous	L. O. A.	5.13½	Yes	Living	None	Good	Good
6.	49632	1	No	Normal			Forceps	R. O. A.	7.8	Yes	Living	Episiotomy	Fair Union	Fair
7.	49645	5	Clinic	Sli. Flat.	Normal	Neg	Spontaneous	L. O. A.	7.3	Yes	Living	None		Fair
8.	49716	1	Clinic	Flat	135-138	Neg	Spontaneous	L. O. A.	5.15	Yes	Living	2nd Degree	Refused Op.	Fair
9.	49723	3	Clinic	25-26-20	Normal	Neg	Spontaneous	L. O. A.	6.9¼	Yes	Living	None		Good
10.	49462	2	Clinic	Flattened	Lou. T. B.	Neg	Spontaneous	L. O. A.	7.0	Yes	Living	1st Degree	Good	T. B. sent to Wav. Hills
11.	49197	4	Clinic	24-33-22	120-146	Neg	Spontaneous	L. O. A.		Yes	Dead	None		Fair
12.	49764		No				Spontaneous	O. A.	5.5	Yes	Living	None		Good
13.	48711	3	No				Spontaneous	R. S. A.	6.4	Yes	Living	Yes	Not Rep. on OW	Improved
14.	49556	1	Clinic	Normal	Normal	Neg	Spontaneous	L. O. A.	7.½	Yes	Living	1st Degree	Good	Good
15.	49793	2	No				Spontaneous	O. A.	6.5½	Yes	Living	None		Good
16.	49579	1	Clinic	Gen. Cont.	Normal	Neg	Mid. Forceps	L. O. A.	9.½	Yes	Living	None		Good
17.	49820	1	No				Lou. Forceps	L. O. A.	8.1	Yes	Living	1st Degree	Good	Fair
18.	49823	5	No				Spontaneous	O. A.	5.12	Yes	Living	None		Good
19.	49844	4	Clinic	Normal	Normal	Neg	Spontaneous	L. O. A.	8.1	Yes	Living	None		Good
20.	49899	?	No				Spontaneous	O. A.	8.11¼	Yes	Living	None		Good
21.	49894		No				Spontaneous	O. A.	7.12	Yes	Living	Slight	Not Repaired	Good
22.	49222	10	No				Spontaneous	R. O. P.	6.4	Yes	Liv. 2 days	None		Good
23.	49553	1	Clinic	Normal	135-160	Neg	Spontaneous	L. O. A.	7.3¾	Yes	Living	Slight	Not. Rep.	Good
24.	50009	2	Clinic	Normal	Normal	Neg	Spontaneous	L. O. A.	7.10½	Yes	Living	None		Good
25.	50055	2	Clinic	Normal	130-134	Neg	Spontaneous	L. O. A.	7.1	Yes	Living	None		Good
26.	50044	1	Clinic	Outlet Cont.	Normal	Pos	Spontaneous	L. O. A.	6.13	Yes	Living	2nd Degree	Good	Good
27.	50081	2	Clinic	Funnel Shap.	Normal	Neg	Spontaneous	O. A.	6.6	Yes	Living	None		Good
28.	50102	1	No				Spontaneous	L. O. A.	7.7½	Yes	Living	2nd Degree	Good	Fair T. B. Suspect
29.	50029	3	No				Spontaneous	L. O. A.	5.6	Yes	Living	None		Good
Home Deliveries:														
30.		6	Clinic	26-28-21	Normal	Neg	Spontaneous	L. O. A.	?	Yes	Living	None		Good
31.		1	Clinic	Normal	Normal	Neg	Spontaneous	L. O. A.	?	Yes	Living	Pos.	?	?
32.		9	Clinic	Normal	Normal	Neg	Spontaneous	O. A.	?	No	Living	None		Good
33.		3	Clinic	Normal	96-142	Neg	Spontaneous	O. A.	5.7	Yes	Living			

No. of Clinic cases, 21; Not Clinic 12.
No. of Foetal deaths, 3.
No. of Maternal deaths, 0.
No. of Eclampsia, 0.
No. of maternal syphilis, 2.

No. Postpartum hemorrhage, 1.
No. of Retroversion on discharge, 15; in 9 cases retroversion, slight.
No. of imperfect union following repair, 2.

NOTE:—There were probably more cases of syphilis. Through a misunderstanding the Wasserman was not made on those women who had not attended clinic.

CASE REPORTS

Foetal Deaths—Case Number 2. J. E. Prenatal Clinic. Hosp. Number 49267, Dr. P. C. Neely Interne: Dr. Pickett, Staff.

Para. 1. Generally contracted pelvis. Measurements: between spines 20, between crests 24, external conjugate 18, Internal conjugate not measured as the promontory could not be reached because of a small pelvic outlet. Baby delivered in taxicab on way to Hospital, premature, approximately 8 months. Baby lived two hours. Wasserman of mother, negative, cause of prematurity, unknown.

Case Number 11. D. S. Prenatal Clinic. Hosp. Number 49197. Dr. Neely Interne: Dr. McConnell, Staff.

Para. 4. A large baby was still born by spontaneous delivery after 36 hours of labor, the pains being for the most part feeble and ineffectual. The foetal heart was heard until within 6 hours before delivery. After the rupture of the membranes, instead of the usual amniotic fluid, there was a great outpouring of orange colored material, approximately two quarts in amount and about the consistency of meconium. It was doubtless stained with meconium, but it could not have been meconium in its entirety as no baby's body could have housed such an amount. We were not able to say whether the baby's death was due to this intra-uterine condition or to long continued pressure, or to cord tension (the cord being coiled twice about the neck.) No autopsy was done. The mother's Wasserman was negative.

Case Number 22. O. W. Not a prenatal case. Hosp. Number 49222. Dr. Neeley, Interne: Dr. McConnell, Staff.

Para. 10. Patient came in Hospital in labor, baby was born in bed before the patient could be taken to the delivery room. Child weighed six pounds and four ounces and died on the second day. A postmortem examination was not convincing. The cause of the death appearing on the death certificate as patent foramen ovale. No Wasserman was made.

Forcep Deliveries—Case Number 16. M. C. Prenatal Clinic. Hosp. Number 49579. Dr. Neeley, Interne: Dr. Speidel, Staff.

Para. 1. Diagnosed in clinic as a case of generally contracted pelvis. Measurements: Between spines, 21; between crests, 26; external conjugate, 19; Promontory not felt because of narrow outlet. Mid forceps were applied after the second stage was well advanced. The indication being cephalo-pelvic disproportion. A 9½ pound baby was delivered without lacerations. Mother and baby were discharged in good condition.

Case Number 17. D. R. Hosp. Number 49820. Dr. Neeley, Interne: Dr. Speidel, Staff.

Para. 1. The mother came into the Hospital in labor. She had had no prenatal care, and no pelvic measurements were recorded. Low forceps were applied. The indications for interference do not appear on the chart, but such a course was doubtless necessary because of cephalo-pelvic disproportion, the baby weighing eight pounds and one ounce. A first degree laceration was repaired at once with resulting good union. The condition of the mother on discharge was good, with the exception of slight retroversion. Condition of baby, good.

Case Number 6. C. S. Hosp. Number 49632. Dr. Neeley, Interne: Dr. McConnell, Staff.

Para. 1. No prenatal care. No measurements recorded. Low forceps were applied, the indication being a prolonged second stage. The weight of the baby was seven pounds and eight ounces. An episiotomy was performed as a deep laceration seemed imminent. An immediate repair was done, which resulted in only a fair union. The condition of the mother on discharge was recorded only fair, there being a slight retroversion as well as imperfect perineal union.

Syphilis—Case Number 13. M. R. Hosp. Number 48711. Dr. Neeley, Interne: Dr. Pickett, Staff.

Para. 3. Wasserman four plus. Her prenatal care had consisted in treatment on a psychopathic Ward, and she had received six injection of salvarsan. There was a condyloma the size of an orange projecting by pedicle from the urethal orifice. This was fibrous in nature, covered with thickened epithelium and was doubtless produced by irritating discharges. The baby was born at term, its weight was six pounds and four ounces and it showed no evidence of syphilis, during its stay in the hospital. The mother was discharged from the surgical department where the condyloma was removed. The mother and child will be kept under the observation of the Venereal Clinic.

Case Number 26. E. T. Hosp. Number 50044. Dr. Neeley, Interne: Dr. Pickett, Staff.

Para. 1. Wasserman four plus. The mother came to the Prenatal Clinic early in pregnancy. She received a full course of salvarsan and mercury before delivery. The baby was born at term, spontaneously, and weighed six pounds and thirteen ounces. Because of a narrow public arch the perineum was subjected to undue strain, and a deep second degree laceration was sustained. This was repaired on the fifth day according to Dr. DeLee's method, and good union was obtained. Mother and baby were discharged in good condition, to be kept under the observation of the venereal clinic.

ORIGINAL ARTICLES

SURGERY OF THE TOXIC THYROID.*

By L. Wallace Frank, A. B., M. D., F. A. C. S., Louisville.

Before entering into a discussion of the surgical aspects of thyroid disease it might be best to consider in a small way the value of the estimation of the basal metabolic rate. During the past few years the literature of basal metabolic studies in cases of goiter has become voluminous. In cases of toxic goiter there is an increase in the rate of normal oxygen consumption and the determination of this rate is used as a means of aiding in the diagnosis of thyrotoxicosis and of differentiating it from diseases closely simulating it. Boothby states that an increased metabolic rate is noted in exophthalmic goiter, toxic adenoma of the thyroid, hyperpituitarism, and febrile conditions and that in actual practice ninety-five per cent of all abnormally increased rates are due to hyperthyroidism. It is further stated that for practical diagnostic value an increased rate indicates thyrotoxicosis due to either exophthalmic or adenomatous goiter, provided febrile diseases are excluded by a normal temperature curve. In other diseases such as essential hypertension, leukemia, diabetes, etc., a slight increase in the metabolic rate may occasionally be encountered.

Means and Aub state that the increase in the metabolic rate runs essentially parallel with the clinical symptoms of intoxication, furthermore that patients with thyroid tumors but no evidence of hyper-thyroidism show no increase in the rate of metabolism. Consequently the study of metabolism affords an excellent means of differentiating toxic and non-toxic goiters.

A study of our own cases reveals that in all diagnosed clinically as toxic goiter there was a definite increase in the rate of metabolism. In one where we had made a diagnosis of colloid goiter, which was proven pathologically, we found the metabolic rate was 55 per cent above the normal. This we could not satisfactorily explain as there were no symptoms of intoxication. However Standiford in reviewing the study of 1143 metabolic rates in 549 patients states that occasionally a case is seen in which there is a variation of the rate that at present cannot be explained or properly classified. Moreover it must be remembered that in making the estimation of the metabolic rate we are using a delicate mechanism which may at any time have some leak or in other way be out of order, and studies made at such times will of course be incorrect. If the result of the metabolic study does not correspond in a measure with the clinical symptoms and findings another reading should be made or if necessary again be repeated. Also this work should be done by one skilled in the technic, who may readily detect some defect in the machine or note any movement of the patient which may cause an error in the interpretation of the metabolic findings.

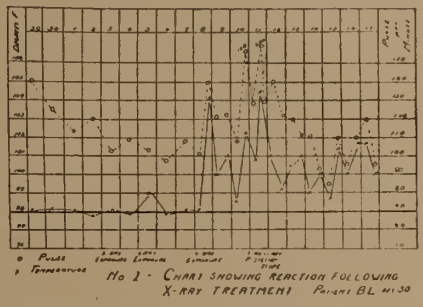
There is no question in our minds that the study of the basal metabolism, when done by competent workers, is a most important means of investigation in cases of thyrotoxicosis. We believe that in a measure the severity of the intoxication can be gauged by this method. However, we do not believe that the operability of a case should be determined by the amount of increase in the basal metabolic rate, nor should the character of operation planned be based upon the metabolic findings. There is no rule of thumb in these cases and the clinical findings and evidences of intoxication must be carefully weighed by the surgeon when planning his work. In no other field of surgery does so much depend upon the judgment of the surgeon as to the ultimate outcome of the patient as in goiter surgery.

That the basal metabolism is no index as to the way a patient will react to operation and that a low rate does not always mean safe surgery is well illustrated by the following case.

E. H. aged 15, was referred to us in January with a diagnosis of exophthalmic goiter in which we concurred. She had marked exophthalmos with all the other ocular findings of this disease. There was a large bilateral enlargement of the thyroid gland, the right lobe being a little more prominent than the left. Over the gland could be noted a thrill and bruit. The lungs were normal and there was no substernal extension of the gland and no thymic enlargement. The pulse rate was 114 per minute and the heart was apparently normal. She was tested by the injection of ½ ccm. of Adrenalin subcutaneously and no reaction noted. Under rest in bed the pulse rate became 100 per minute and we decided to operate. We felt that at this time it was much safer to do a ligation and to remove the gland later. Consequently a bilateral superior polar ligation was done with no post-operative reaction. The pulse rate gradually diminished and when she left the hospital ten days after operation was 88 to 92 per minute. This patient was instructed to rest and to report back for further observation at the end of a month. This she failed to do and we did not see her again until the first part of July. Her pulse rate was then 100 to 108

*Read before the Kentucky Midland Medical Society.

per minute, and the blood pressure 130-66 and her heart except for the rapidity seemed normal. The gland had become larger and the thrill which had disappeared following the ligation was again noted. She was sent to the hospital and the basal metabolic rate showed 17 per cent above the normal. On July 6th she was operated and the right lobe removed. The gland was very vascular and there was some loss of blood at the operation, though not great. On the evening of the 6th the pulse rate was 140 per minute and the temperature 102 to 103 degrees F., this continued to rise and on the evening of the 7th the temperature was 105 2-5 degrees F., and the pulse 180 (?) per minute. Under appropriate treatment her temperature came down and two days after operation the pulse was 118 per minute and the temperature 100 F. and the patient made a rapid and satisfactory recovery.

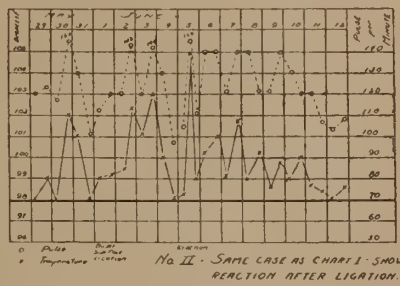


No 1 - Chart showing reaction following X-ray treatment

In any discussion of thyroid therapy consideration of the x-ray treatment of the toxic thyroid should not be omitted. Mayo states that with x-ray treatment remissions occur just as remissions occur without treatment. In his experience it has been a failure or of but temporary benefit. Such has also been our experience; the patient improved perhaps so long as treatment was continued, but when this was stopped recrudescence soon occurred. The great argument which is advanced by the advocates of x-ray therapy has been that it is free from danger and that the mortality is nil. Such, however, is not the case, the patient may have just as serious reaction following radiation as from operation and deaths have occurred following treatment with the x-ray. That such severe reactions may occur is well illustrated by the following case which we saw with Dr. R. H. Davis, of this city.

B. L., aged 30, had had a goiter for a number of years. Lately she has become nervous, has developed tachycardia, exhaustion, tremor, etc., and a basal metabolic study revealed that the rate was 48 per cent above the normal. She had a certain amount of mental confusion which two consultants thought was due to the over-active thyroid. Her pulse was 120 to 130 per minute and the temperature was normal. This continued about the same for several days, the pulse gradually declining. She was then given x-ray exposures over the gland. Following the third treatment her temperature began to rise until it reached 106 F. (Axillary) and the pulse rate was 200 per minute (counted with a stethoscope at the heart.) Under appropriate treatment the pulse and temperature gradually subsided and the girl recovered. That this reaction was due to the thyroid is borne out by the fact that she had a similar reaction coming on 72 hours after a bilateral superior polar ligation. This also subsided under treatment and we are glad to say that since then she has had most of the thyroid removed without any decided reaction and is now entirely well.

A few days following the recovery of this patient from her x-ray reaction one of us saw in consultation a similar case treated by another radiologist with almost as severe a reaction, as gauged by the pulse rate and temperature, and the latter lost her life as a result of the reaction. I stated "another radiologist" for it might be claimed that the man who treated our case was lax in his technic or inexperienced in the treatment of such conditions. However, here are two Roentgenologists of experience and than whom there are none better in the State who have the same type of reaction following their treatment of the toxic thyroid.



No II - Same case as chart 1 - showing reaction after ligation.

To our mind except in a very limited field the x-ray has no place in the therapeutics of toxic goiter. This is a surgical condition and should be treated as such. Often, it is true, cases are seen which we would prefer not operating and the easiest way is to refer them to the radiologist with the statement that when improvement takes place the gland can then be removed. Such is not our practice and we have operated all cases referred to us except one, and she was suffering more from myocardial disease than from any activity of her thyroid. In those cases coming to operation after treatment by the Roentgen ray we have found that the operation is rendered more difficult not only on account of the density of adhesions but also on account of the fact that the gland capsule and tissue is more friable and the bleeding consequently greater.

One of the problems confronting the general Practitioner is the determination as to when is a goiter case surgical. As Crile has said the time has come in cases of thyro-toxicosis, just as it did in appendicitis years ago, that the case becomes surgical as soon as a definite diagnosis is made. This we wish to emphasize, for just as serious consequences follow delay in toxic goiters, namely cardiac degeneration and failure, nervous exhaustion and mental wrecks, as follow delay in appendicitis, that is abscess formation and peritonitis. So we would agree with Crile when he says that the toxic goiter case becomes surgical as soon as the diagnosis is made.

Regarding the time of operation it is the concensus of opinion that during a crisis operation is contra-indicated. Exophthalmic goiter is characterized by periods of marked activity followed by periods of remission of symptoms. The time to operate is not during an exacerbation but to then use supportive measures such as rest, feeding, sedatives and cardiac medication. When the crisis is over and the patient starts to mend operation should be done. In bad cases Crile has found that blood transfusion previous to operation lessens the reaction and makes the convalescence easier and smoother.

Just what type of operation should be done in any individual case can be determined only by careful study and investigation. No two cases are alike and each must be considered separately. Some patients with good myocardia, even though the basal metabolic rate may be high, can safely undergo radical surgery, while others with poor heart muscle must be handled more conservatively. It is our belief that each case should be studied with a view to doing a thyroidectomy at the first operation. If we conclude that the patient cannot withstand the complete operation at one sitting, then we consider, unilateral lobectomy, partial unilateral lobectomy or ligation of one or both superior poles. In the exophthalmic cases thyroidectomy must be done to obtain cures. In the toxic adenomas often the hyperplastic tissue is located in one lobe and in such unilateral lobectomy may produce satisfactory results. Not infrequently in the exophthalmic cases we remove the gland in stages and this is the method we pursued in the two cases previously cited.

The surgeon doing thyroid work must at times modify his planned procedure and should always have the case so well under control that he can quit and send the patient back to bed at short notice. The case of Miss V., referred by Dr. Witherspoon, of Harrodsburg, illustrates this point very well. She had a marked goiter, with exophthalmos and all the other classical symptoms and findings of Graves disease. The heart muscle was good and the pulse rate 100 per minute when she was admitted to the hospital. She was anaesthetized in her room and taken to the operating pavillion. A low collar incision was made preparatory to doing a unilateral lobectomy, at this point her pulse which was 160 per minute became irregular The muscles were separated and both superior poles doubly ligated, the wound rapidly closed and the patient returned to bed. Following this she improved greatly and in ten days we again attempted to remove the gland but she did not take the anaesthetic well so no operative measure was undertaken and she was permitted to return home. At the end of three month she came back to the hospital and thyroidectomy was performed with practically no post-operative reaction.

And now a word as to the value of ligation operations: Primarily it must be understood that this is only a step in the surgical management of exophthalmic goiter. The patient should not be dismissed after ligation but should be instructed to return for thyroidectomy. Ligation does not cure although a number of surgeons may think that it does. In our experience, extending over a number of years and including several hundred cases, we have seen and operated upon a large number who had been ligated by other surgeons and these cases no doubt were carried by the first surgeon as cures in as much as the patient had not returned to him for further treatment. There is no question but that ligation does cause marked amelioration of symptoms, the pulse rate decreases, the eyes feel better, the patient gains weight etc., and this improvement may last one or more years. However sooner or later the symptoms recur with all their old virulence and if thyroidectomy is postponed until these late recurrences take place or until the secondary attack is as severe as the first then we have lost our opportunity and one of our safe guards in the radical treatment of exophthalmic goiter has been utilized to no avail.

It is our custom in the severe cases of thyrotoxicosis to do a unilateral or bilateral ligation of the superior poles as the first step in the treatment of this condition. If the case is very acute, only one pole is ligated and the patient is returned to bed. The reaction, if any, is noted, and shortly thereafter the other pole is ligated depending upon the severity of the reaction to the first operative proceedure. Handling the case in this manner gives us an opportunity to learn what the patient can stand and is of assistance in planning the next step. In some we wait six weeks, in others we may delay for three months, but never longer, the removal of part or all of the

gland. In patients having practically no reaction, or in those whom we feel sure can stand more radical procedure we practice lobectomy or partial lobectomy much earlier.

Recently we have noticed in the literature of toxic goiter that ligation of the inferior thyroid arteries is again being advocated. In this we do not believe, it being our opinion that it is not so much a disturbance in the thyroid circulation which brings improvement as it is the interruption of the enervation and this comes through the superior poles. The great advantage of polar ligation lies in the ease and rapidity with which it can be done. This advantage we do not have in ligation of the inferior vessels and personally we prefer to remove a part of a lobe as an easier and less dangerous procedure and one which is followed by much greater improvement.

To our mind one of the most important features in the operative treatment of exophthalmic goiter is the choice of anaesthetic. By some local anaesthesia is advocated and yet we have heard these same surgeons state that it was their belief that psychic shock, or very strong emotions was a potent factor in the causation of exophthalmic goiter. When we add to the dread that patients have of operation the sensation of pain, and this cannot be entirely removed by local anaesthesia, and also the click of the instruments, is it no wonder that at times no benefit follows operations done under such circumstances.

When the operation is to be one involving the removal of both or a single lobe of the thyroid the dissection will of necessity be close to the trachea. One of the most common complications following thyroidectomy is tracheitis, and if ether is used as the anaesthetic not infrequently this tracheitis is followed by pneumonia. We believe that in all cases of toxic goiter gas-oxygen is the anaesthetic of choice; in the most severe cases we use gas-oxygen to the point of analgesia and reinforce our gas with local infiltration of novocaine. This avoids complications seen after the use of a general anaesthetic and also removes the psychic strain of the purely local anaesthesia. In large adenoma or colloid goiters with substernal extension, where the accessory muscles of respiration are used in breathing we advise local anaesthesia, for a general anaesthetic paralizes the accessory muscles and the patient may die of suffocation.

We would like to discuss the post-operative method of treating cases of thyroid intoxication. This is almost as important as the operative handling, but the scope of this paper is limited and time will not permit the presentation of that side of the subject at this meeting.

In conclusion, we would say that:

First, the study of basal metabolism is a most valuable aid in the investigation and diagnosis of toxic goiter, but is no index to operability nor of the post-operative reaction.

Second, that the x-ray is not without danger and death may result from reaction just as after operation.

Third, that toxic goiter is a surgical condition.

Fourth, that the best and safest method of treating toxic goiter surgically is by carefully graded operation.

Fifth, that the best anaesthetic is gas-oxygen to the point of analgesia combined with novocaine locally.

JUVENILE TUBERCULOSIS.*

By Oscar O. Miller, Louisville.

(Medical Director and Superintendent, Waverly Hill Sanatorium and Free Tuberculosis Dispensary.)

Since every human, living the community life, receives an infection with the tubercle bacillus[1], and since the greatest incidence of infection is during childhood[2] it is patent to all, that if we are to control tuberculosis, it must ultimately be, by either recognizing in the child its earliest manifestations, or suspecting its presence.

In the adult we distinguish between tubercle, which is evidence of infection, and hence a relative immunity; and tuberculosis, either active or arrested, which is evidence of disease present or past.

In dealing with tuberculosis in the child, the lines are not so clearly drawn. Infection may result in either immunity, or manifest disease; and we, as advisers and guardians of our respective communities, may in a measure, so control the environmental factors in certain cases, that infection, which under ordinary circumstances would result in active tuberculosis, may become a protective medium and produce a relative immunity.

In the majority of instances, tuberculosis pursues a different course in the child to that in the adult. The lymphatic system in the child is well in evidence and is the first line of defense. As a result of this, we are dealing with a hilum or glandular tuberculosis, rather than with the parenchymatous pulmonary type of adults.

In childhood tuberculosis there are two mortality rates, one the first two years of life, and the other after the tenth year[3]. Pulmon-

*Read before the Kentucky State Medical Association, Paducah, October 16, 17, 18, 19, 1922.

ary tuberculosis between the second and tenth years is rather an infrequent cause of death.

The material for this paper has been divided into what might be termed a "true juvenile tuberculosis," and an "adult type of tuberculosis" in the juvenile. The diagnosis of the juvenile type of tuberculosis is difficult, and can only be arrived at, after repeated painstaking examinations, a careful family history, a proper evaluation of symptoms, tuberculin tests, and X-ray findings. For the proper understanding of the material herewith presented, it is necessary that a brief description be given of the classifications used.



Figure No. 1—X-ray 826—Physical examination negative. X-ray diagnosis, suspect, illustrating streamers in all directions to the third zone in a female, white, age 8. Exposure, mother has pulmonary tuberculosis.

The terms used refer solely to the pulmonary condition; they have no bearing on, and are unaffected by, any complications that may be present.

"Apparently healthy" applies to those cases which have a negative family history, are without constitutional symptoms, and reveal no abnormal physical signs in the chest. The tuberculin test may be either positive or negative. The "apparently healthy suspects" are the same as the foregoing, except, that they may have a family history of tuberculosis, or a history of exposure to infection. "Suspects" are those with suspicious local and constitutional signs and symptoms—anemia, malnutrition, loss of energy, failure to gain weight, etc. A history of exposure may or may not be present.

"Positives" are those cases with a definite prolonged exposure to infection, and definite constitutional symptoms and physical signs in the chest. Such a case may be classified as positive, even though the signs in the chest may be vague and indefinite. In some

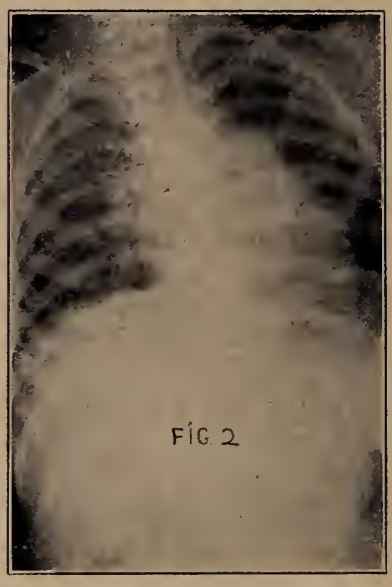


Figure No. 2—X-ray 825—Physical examination negative. X-ray diagnosis positive, illustrating heavy roots with mottling in second zone, in a female, white, age 5. Exposure, mother, has pulmonary tuberculosis.

cases a negative Wassermann is needed before a positive diagnosis can be made. A strong tuberculin re-action in a child under five, we consider as presumptive evidence of disease, and recommend strict observation of such cases. In anterior cervical adenitis, if it be proved definitely tuberculous, the case automatically becomes a suspect or a positive, depending on the signs in the chest. A tuberculous glandular infection is no criterion that pulmonary infection exists also; neither are we

TABLE I.

RESULT OF TUBERCULIN TESTS 33 CHILDREN

Number Cases	Von Pirquet	Mantoux	Sub Q	Total Percentages	Dose mg.	Total Positives	Total Negatives
33							
	15			45%	?		
		I. 8		70%	.01—.1		
		II. 3		80%	.1		
		III. 0		0%	1.0		
			4	91%	3.0		
						0 or 91%	3*

*Negative Von Pirquet cases who left the institution before tests were completed. Ignoring these, gives 30 positives in 30 children, or 100 per cent positives.

Mg.—milligrams

X—positive.

test, should be administered. The test should justified in assuming, that such infection conveys an immunity to pulmonary disease.

It is germain to the subject to say a few words in regard to the tuberculin test. A positive re-action is merely evidence of infection, and not of disease. The value of the test decreases with the age of the patient. The Von Pirquet is usually the test of choice, yet this is positive in only 60 per cent of cases tested[2]. In the event a negative Von Pirquet is obtained, a Mantoux, or intra-cutaneous, human tuberculin was diluted so that .1 c. c. represented .01 mg; one-tenth of a cubic centimeter was injected with a twenty-seven guage needle between the layers of the skin, so as to form the characteristic white bleb; the test being carefully controlled by injecting .1 c.c phenol glycerine solution in a similar manner. In the event a negative Mantoux was obtained, the test was repeated using .1 mg. tuberculin; and if still negative, the test was again repeated using 1 mg. Of the eighteen negative Von Pirquet tests, eleven became

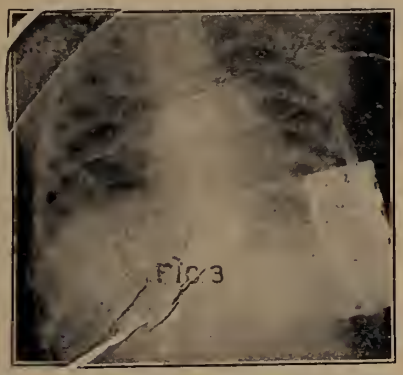


Figure No. 3.—X-ray 815—Physical examination negative. X-ray diagnosis positive, illustrating haziness in both upper lobes, more marked in right upper. Male, white, age 4. Exposure, father died of pulmonary tuberculosis.



Figure No. 4—X-ray 799—Physical examination negative, X-ray diagnosis positive, illustrating heavy root (left); with fibro-caseous tubercles in same. Haziness over left upper lobe. Female, white, age 3. Exposure, mother died from pulmonary tuberculosis.

be read at intervals of twenty-four and forty-eight hours, in order not to overlook a delayed re-action. In this series, both human and bovine tuberculin were used, as well as a control, containing phenol and glycerine in saline solution.

Three scarifications were made on the arm, in the usual manner, and the O. T. human applied to the approximal, the bovine to the mesial, and the control to the distal scarification. Of the thirty-three children tested, fifteen were positive and eighteen were negative. This represents only 45 per cent positives among children classified as tuberculous, 79 per cent of whom have a definite history of exposure. To those cases giving a negative Von Pirquet test, the Mantoux, or intra-cutaneous, test was applied. In this test O. T. positive to the Mantoux, in various dosages. The highest percentage of positive intra-cutaneous tests was obtained with .1 mg. tuberculin. Most of the negative tests were obtained with .01 mg. In analyzing the cases presented by Happ and Casparis[4], it is also noted that their highest percentage of positive re-actions occurred with .1 mg. We, therefore, recommend, that when the Von Pirquet test is negative, the intra-cutaneous be applied in dosage of .1 mg. O. T. tuberculin. The sub-cutaneous method, as advocated by Hamberger, is the most reliable test, yet it is not entirely devoid of danger in working with supposedly tuberculous cases. Four cases remained persistently negative to all four tests, with a dosage as high as 1 mg. It

TABLE II.

DOSAGE IN TUBERCULIN TESTS

Number Cases	Test	Dose Millegram	Positives	Percentage	Negative
33	Von Pirquet	?	15	27%	18
11	Mantoux	.01	3	45%	8
12	Mantoux	.1	8	66%	4
4	Mantoux	1.0	0	0%	4
4	Sub Q	3.0	4	100%	0

was decided in these cases to resort to the sub-cutaneous method; accordingly, 3 mg. was injected, and all evinced a decided local re-action, the zone of redness being two inches in diameter with some induration and slight tenderness. Only one exhibited a mild constitutional re-action, with fever 101.8 that evening. Two others had 99.6 and 99.4, which cannot be considered as a febrile re-action in a child. Three children, negative to the first tuberculin test, were discharged at the beginning of this work, and before they could



Figure No. 5—X-ray 4742—P. & R. positive, illustrating hilum tuberculosis in an infant, age 8 months. Exposure, father has tuberculosis.

be subjected to any further tests; these, in all likelihood, would have re-acted. If we disregard these cases, we have thirty positive obtained in thirty children, ranging in age from two years to sixteen years. This is one hundred per cent positive re-actions. Of the cases which remained negative to all tests, except the sub-cutaneous; all except one, show on examination, either physical or rontgenological evidences of abnormality in the chest; and all except one, give a family history of tuberculosis, and a history of exposure. These are examples of high tolerance and low sensitiveness to tuberculin. While negative tuberculin tests, ordinarily, exclude active tuberculosis; in cases other than those in the terminal stages of tuberculous infection, occasionally, patients will be seen, in which the disease is present, notwithstanding, negative tuberculin tests as ordinarily conducted.

The X-ray is a valuable aid in arriving at a diagnosis in juvenile tuberculosis. So far, the normal roentgenogram in the child has not been definitely determined. With no definite form before us, difficulty has been experienced in deciding just when, and to what extent, certain markings in the lungs should be considered pathological. Naturally the personal equation enters into the interpretations, and some of the conclusions may be debatable. Proper exposure is always important in X-ray work, but is especially so in



Figure No. 6—X-ray 730—P. & R. positive. Adult type of tuberculosis, quiescent; under continuous observation for ten years. Male, white, age 15. Exposure, no history.

the juvenile chest. The slightest over-exposure will drown out the faint markings upon which a diagnosis depends. It is better to slightly under-expose one film, and make a normal exposure on the other. All films should be stereoscopic where possible.

Streamers radiating in all directions to the third zone, or parenchyma (Fig No. 1), have been considered abnormal, and are classified as suspects; although, it is conceded, that such markings, may occur from any respiratory infection; and are not necessarily indicative of tuberculous infection. Heavy roots with numerous fibro-caseous, or calcified tubercles, in same, have also been classified as suspects. The same objections, to a lesser extent, are open to this, as stated above. The age of the child has been a controlling factor, to a certain degree, and has been considered in reading the rontgenograms. What might be

TABLE III.*
COMPPARISON OF PHYSICAL AND X-RAY FINDINGS

Cases	Positives	Suspects	Negative
14	P&R 2	P&R 8	P&R 4
19	R 14	R 5	

*"P. & R."—Physical examination and rontgenogram agree.
"R"—Rontgenological evidence predominates.

considered as normal for a child of twelve, may prove abnormal in a child of three. Less difficulty was experienced in classifying those cases which were frankly positive. Such were those exhibiting heavy roots, with distinct pin point mottling in the second and third zone. (Fig. No. 2.) Those in which the evidence was less conspicuous, were characterized by peribronchial beading, streamers to the third zone and into the apex, and faint hazy areas of density, simulating fans, at the parenchyma, (Fig. 3, 4, 5). For diagnostic purposes, the X-ray and physical examination agreed in the main in twenty cases, and was at variance in thirteen cases. In those cases where the physical examination and the stereo-rontgenograms harmonize, as to the extent and character of the lesion, "P&R" is used as a designating sign. Under "P&R", fourteen cases are in agreement, and eighteen cases are at variance; i.e., the greatest extent of pathology is revealed by the stereo-rontgenograms.



Figure No. 7—X-ray 695—P. & R. positive. Adult type of tuberculosis. Female, colored, age 12. Exposure, no history.

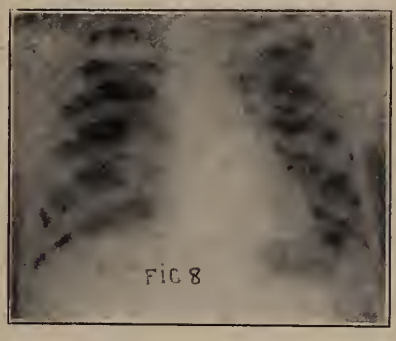


Figure No. 8—X-ray 324—P. & R. positive. Adult type o ftuberculosis. Male, colored. age 13. Exposure, no history

In many cases, physical signs are entirely absent and there is nothing in the way of clinical symptoms or the appearance of the child, to lead one to suspect grave pulmonary involvement. In seven cases—ages three to eight years—the chest was negative for pathological findings, the children were symptom free, and looked the picture of health. All of them re-acted to tuberculin, five of them on the first, two on the second, and one on the third test. All of them had had a prolonged and intimate exposure to infection. The X-ray shows a definite involvement in all; and in two, a diffuse pulmonary tuberculosis, (Fig. 3, 4).

Pulmonary tuberculosis in children, under two years of age, usually runs an acute and progressive course. The chest examination of children a few months old is usually unsatisfactory. Para sternal or para vertebral dullness when elicited, are extremely important and indicative of a tracheo-bronchial adenopathy. A chronic bronchitis, with loud bubbling rales, is a characteristic feature of some cases of hilum tuberculosis. If, in addition to the foregoing, a positive tuberculin test and a history of exposure are obtained, the diagnosis is confirmed. Whenever it is possible, an X-ray examination should be made. A distinct widening of the hilus, or mottling in the second zone, leaves no doubt as to the pathology present, (Fig. 5). In older children, who in a measure are able to co-operate the presence of the tracheal tone of the whispered voice, as heard over the cervical spinus process and conducted below the third or fourth dorsal spine, has usually been considered of great value. This is the so-called D'Espine sign[3], and has been confirmed, more or less, at autopsy and by X-ray findings, as indicative of tracheo-bronchial adenopathy. Landis, and others, working on a special committee for the purpose of establishing the normal X-ray and physical findings in the chest of normal children, conclude that D'Espine's sign is of little value, as it was found frequently in apparently healthy children[5].

In apparently healthy children D'Espine's sign may be interpreted conservatively, but in children with evidence or loss of well being and symptoms referable to the chest, it should be tentatively assigned its full value, and its confirmation sought by X-ray examination. It occurred in only four of these cases. In twelve there was a distinct increase in the whispered voice over the spines, but it lacked the characteristic tracheal tone needed for a positive D'Espine. A positive D'Espine did not occur in any of the frankly positive cases designated "P&R". The four cases in which it was observed, were classified as suspects on examination—two were considered positive to X-ray, and two suspicious. Comparison of the X-ray reports and the physical examination charts of those cases in which D'Espine's sign was observed, with those giving an increase in whispered voice failed to show any essential difference in the roots; neither was there any special variation from those cases negative for this phenomena. In fact, the

roots were slightly heavier in some of the negative D'Espine's, than in those giving this sign. Notwithstanding this I still consider D'Espine's sign of value in cases presenting symptoms of intra-thoracic disease.

In the adult type of tuberculosis in the child, physical signs predominate in the chest; such as, dullness, rales, altered breath sounds, constitutional symptoms are in evidence, fever, loss of weight, malaise, languor, anorexia, cough may or may not be present, expectoration is infrequent, hemoptysis is rare. In other words, infection has traveled out from the hilum and invaded the parenchyma of the lungs. It is this type of case, with

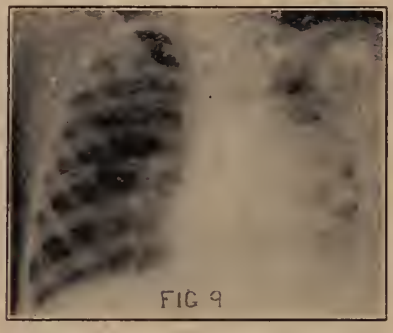


Figure No. 9—X-ray 323—P. & R. positive. Adult type tuberculosis. Female, colored, age 15. Exposure, mother probably died of tuberculosis.

vague symptoms only, that I wish to especially stress. To aid in their detection, I urge the continual observation and examination of contacts from whose ranks such cases are recruited. The prognosis in these cases, with moderate involvement, is uniformly bad, irrespective of absence of symptoms. Those with minimal involvement and good resistance, do reasonably well under adequate treatment. The difficulty in these cases is knowing when they are well. The rules that apply to adult cases, in estimating arrested lesions, are not applicable to the child. Absence of signs and symptoms, over many months, is to be viewed as quiescence, rather than arrest of the process. From this stage, on slight provocation, it may progress and become exceedingly active.

The following case histories, in brief, are offered as illustrations of the adult type of tuberculosis:

Figure No. 6, Case No. 220, X-ray No. 730—This is the case of a white male child whose present age is fifteen. He was admitted to this institution ten years ago with a diagnosis of pulmonary tuberculosis, moderately advanced. He has been in the institution continuously since admission, except for a period of two months. He ran a persistent temperature the first two months, and had frequent febrile attacks throughout 1913; his temperature record from then on is uniformly good, the febrile periods becoming less frequent. He has been practically symptom free since 1918. This child was received from one of the orphan homes. If he were returned to this environment, before all signs and symptoms have entirely cleared, it would result in a fatal outcome. At the present moment he is a moderately advanced case, quiescent.

Figure No. 7, X-ray No. 595—Representing a colored female child, age 12, was admitted to this institution nine months ago as a "positive" for pulmonary tuberculosis. This child looks well and is practically symptom free, except for an occasional temperature of one degree. The prognosis in this case is unfavorable.

Figure No. 8, Case No. 10, X-ray No. 324—This patient is a colored male, age 12, who was under treatment in this institution for about eighteen months. He was admitted as a "positive" for pulmonary tuberculosis, running a temperature from 97 to 101 for the first thirty days. He had a persistent hard cough and pains in the chest. His symptoms rapidly cleared up. He had a slight hemoptysis three months after admission. He remained symptom free and left the institution against advice. His lesion is progressing and will ultimately terminate fatally.

Figue No. 9, Case 10,517, X-ray No. 323—A colored female, age 12, who died in the institution after being hospitalized two years and eight months. She was admitted to the institution as a "positive" for pulmonary tuberculosis, moderately advanced, complicated by tuberculosis of the elbow and supra clavicular lymph nodes. The child was poorly developed and undernourished. She ran a persistent febrile course the first six months, from then on she had periods of latency covering many months; meanwhile, the case was slowly progressive to a fatal termination.

In conclusion, I conceive, it is the duty of every physician, not only, to treat the tuberculous member of the household, but to watch the children exposed to infection. As a means to this end, it would be advisable to notify the school physicians of the family history of these children, and request them to observe these pupils throughout their school life. There are not sufficient "open air" schools to care for all of the cases that rightfully belong there. A concerted demand on the part of physicians, that children of tuberculous parentage, who, on examination, are found to be suspects, should be thus cared for, would result in more "open air" schools. This can be brought about by the physicians referring these children through the proper channels, for admission to these schools. The resulting

waiting list, will be one of the means of securing the desired accommodations. Another means for handling these cases, where there is an accredited tuberculosis organization, is to have the organization assume the responsibility of watching the children.

CONCLUSIONS

1. The most important point in the diagnosis of tuberculosis in the child, is a history of prolonged exposure to infection.

2. Such children often harbor serious pulmonary infection, without outward manifestation.

3. Tuberculin in dosage .1 mg. is the most appropriate dose for the intra-cutaneous test, when the skin test (Von Pirquet) is negative.

4. In adults, physical examination is the method of choice; while in children and infants, the X-ray, notwithstanding, the divergence of opinion in interpretation, is an indispensable aid.

I am indebted to Dr. E. K. Disney, Resident Physician, Waverly Hill Sanatorium for invaluable help in making many of the X-ray films and most of the tuberculin tests. I am also indebted to the Children's Free Hospital, Louisville, Kentucky, for permission to use Figure No. 5, X-ray No. 4742.

My thanks are due Mr. F. W. Pearse, 431 W. Walnut street, Louisville, Kentucky, for many courtesies shown in reproducing the rontgenograms.

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DISCUSSION.

S. W. Bates, Louisville: I think this is one of the most important papers that have been presented to the Association. It shows a great deal of labor and thought on Dr. Miller's part, and it is not only an important subject to men who are dealing with tuberculosis but to every man engaged in the practice of medicine. Those of you who are not engaged in tuberculosis work especially, realize that juvenile tuberculosis and early infection may be important factors in any condition that comes up.

We have all spent much time, and our forefathers particularly, in trying to prove that tuberculosis is not hereditary. I think we have successfully established that fact. We have disproven the heredity of tuberculosis, but at the same time we have ignored the thing that led our forefathers to believe in the heredity of it, and that is the existence of early infection in children. The thing that led our forefathers to believe that tuberculosis was directly hereditary was the fact that practically all children of tuberculous parents became infected in the early years of life. It maybe a somewhat startling statement to make, but all of us living in a community life received the infection of tuberculosis at one time or another. That is a strong position to take, but it is being proved more conclusively every day.

In this series of cases of Dr. Miller, by proper tests he has demonstrated 100 per cent. of early infections in these children, and this is borne out by statistics with practically all men who are engaged in tuberculosis work; that 100 per cent. of all children in the early months of life become infected, whether they develop active disease or not.

Dr. Miller has covered the subject in such detail that he has practically left nothing to be said on the subject. The only thing I wish to emphasize is the fact of this early infection and the necessity for the general practitioner or family physician realizing it and waking up to the fact that there is where our fight against tuberculosis is to be made. There is no use in carrying on a campaign against tuberculosis and of building sanitariums and hospitals to take care of them if we neglect the children of tuberculous parents of today and allow them to overwhelm the hospitals in a few years time. It is up to the general practitioner, who is treating tuberculous patients, to realize that it is not so much his duty to treat the individual patients that he sees in the family as it is to take care of the children in that family and see that they are given proper care and placed under the proper environment to protect them in future life rather than to treat the individual patient who is sick in the home at the time.

John Price, Louisville: I had the misfortune to miss the first part of this very interesting and instructive paper. There is no one feature which should be more stressed than the importance of looking for tuberculosis in the infant. So many of us have difficulties to contend with in connection with the feeding of babies, because babies a year old or less do not do well on formulas; they have no gastrointestinal upsets; they have no prolonged difficulty with digestion; they have no fever, yet they do not do well. We cannot see why it is, and under such circumstances we

are apt to rule out tuberculosis. We will be surprised, however, to find how many of these children have tuberculosis, and it is never found out unless an autopsy is done.

The diagnosis of tuberculosis in a child less than two years of age is one of the most difficult things in the world, because there is nothing definite that you can pin yourself down to. It rests on three things: a positive von Pirquet, the x-ray, and the D'Espine's sign. What is D'Espine's sign? In the normal person, on auscultation over the spinous processes, pectoriloquy ceases at the bifurcation of the trachea, and in infants opposite the seventh cervical vertebra. If pectoriliquy is heard lower than this it indicates enlargement of the bronchial glands. In pulmonary tuberculosis the bronchophony over the spinous processes is heard at a lower level than in health. The bronchial glands are involved in these cases after the initial infection of the lung. A Von Pirquet, if positive in a child two years old, means that the child has an active tuberculosis. We never find a healed lesion in a child two years of age; it means active tuberculosis up to two years. The x-ray is valuable in these cases.

As I have said, the diagnosis is an exceedingly difficult thing to make, and it is a condition which causes death. A great many of these babies are apparently simply weak and they seem to die from no cause at all, and the only way you can frequently find out they have tuberculosis is by postmortem examination. But it is a thing to be borne in mind.

Vernon Blythe, Paducah: This has been a very interesting paper from many standpoints. At present, to a considerable extent we are unfortunate in our surroundings in Paducah and are not properly prepared to look after tuberculous suspects and patients. We have had difficulty in connection with our tuberculous sanitarium. Formerly it was supported by subscriptions, and then drifted into county management. I think this is a matter that should be taken up seriously by the State Board of Health—the care of tuberculous patients in cities not supporting tuberculous sanitariums. Many patients are a menace under our surroundings.

With reference to the diagnosis of these cases, the x-ray plate of an adult tuberculous patient is quite different from one of the tuberculous infant. The bronchial margins, the hilus sign the enlarged glands are more definitely marked in the adult because of possible bronchial infection and conditions of city life, coal dust, and things of that kind. It is, of course, out of the question sometimes to make a diagnosis of tuberculosis in a child from the condition of the sputum. Very often mistakes have been made, and conditions supposed to be tuberculous on insufficient grounds have occurred from infection, such as influenza, which has been prevalent in recent years. Other signs of infection are the presence of staphylococci and streptococci. There is no doubt but what the infection begins very early in child life. It is a question in my mind how early it is that children become infected. Very few practitioners now, I take it, believe that tuberculosis is hereditary. It is difficult to make a differential diagnosis at a very early age.

Oscar O. Miller, Louisville (closing): I enjoyed the discussion and wish to thank the gentlemen for the interest they have shown in the paper.

I will take up first, the last speaker's opinion in regard to hereditary tuberculosis. There are some cases of hereditary tuberculosis; but they are so rare as to be negligible. In some cases of hereditary tuberculosis macroscopical or microscopical tubercle formation is not observed, but smears made from sections of the liver reveal, occasionally, acid fast bacilli. Proved cases of hereditary tuberculosis are so rare that it may be considered as negligible.

As to the time the child becomes infected. No child can live with an open case of pulmonary tuberculosis and not receive an infection. They can become infected with great rapidity, possibly within the first day or the first two days they are in contact with the tuberculous patient, especially a tuberculous mother. A good deal will depend on whether the child is exposed to active or inactive tuberculosis. If children have active pulmonary tuberculosis in the first two years of life, they are likely to die. If they live beyond the second year, the immediate prognosis in some cases is not unfavorable. Between the second and tenth year the death rate from pulmonary tuberculosis in children is rather infrequent. I have a table showing that.

I was sorry to hear Dr. Blythe say that the sanitorium in this county has not been a success. I would urge the profession here to get behind it. Kentucky needs over four thousand beds to adequately care for its tuberculous—we have less than four hundred.

Another important thing in juvenile tuberculosis, is that suspicious contacts should be placed in open air schools and kept under observation. Here they receive a shower bath and rub down; breakfast, dinner and a quart of milk daily; rest on cots from one to three in the afternoon; school work in an open window room. Temperature records are kept and periodical examinations are made.

In many cases of tuberculosis there is an increase in the whispered voice below the third or fourth dossal space. The National Association of Tuberculosis appointed a committee to investigate the normal roentgenogram in children and the normal physical signs in the chest; in their report they think D'Epine's sign is of little value. I do not subscribe to that at present.

Children with evidences of intrathoracic disease giving positive D'Epine's sign should be closely observed. In our children only four gave D'Espine's sign in case that were not diagnosed definitely as cases of tuberculosis. Increase in the whispered voice was noted in twelve cases. D'Espine's sign did not occur in any of the frankly positive cases reported in this paper.

LEUCOPLAKIA ASSOCIATED WITH LICHEN PLANUS. TWO CASES.*

By William J. Young, Louisville

About nine months ago a patient came to me whose main trouble was leucoplakia buccalis. There were many patches on the buccal mucosa, and three weeks previously the lesions of lichen planus appeared on her wrists and arms with the characteristic itching.

Under roentgen-ray treatment and intramuscular injections of bichloride of mercury the lichen planus resolved and disappeared. However, the leucoplakia remained and today shows no disposition to improve. I expect to keep the patient under observation for several months to see whether any changes occur indicating the beginning of malignancy.

Today another patient appeared with extensive leucoplakia of the tongue and sides of the mouth. On questioning her during the examination she said she had considerable itching in the inguinal regions and on inspection it was found she had lichen planus hypertrophicus.

I mention these two cases as being rather unusual. Both leucoplakia and lichen planus hypertrophicus are very rare, and to have seen two cases in which this combination occurred within one year I think is extremely unusual.

I may say that the blood Wassermann on both these patients was negative. We are taught by all the text books I have seen that leucoplakia is often associated with syphilis, and as ten per cent of the people in the world have syphilis we can easily see why any disease might be classed as a complication of syphilis. That is the only reason so far as I know why leucoplakia is sometimes classed as a syphilitic manifestation. There is no reason to assume that leucoplakia is syphilitic in origin.

So far as my informaation extends it is rare for leucoplakia and lichen planus to be associated, two skin diseases of which we know absolutely nothing. Lichen planus usually subsides under roentgen-ray treatment and intramuscular injections of bichloride of mercury, and sometimes we also get rid of the leucoplakia by the same method of treatment. We know absolutely nothing about leucoplakia. When confronted with a patient having this disease we always obtain the history that some general practitioner has examined the lesions and confusing the disease with something else has used local applications of nitrate of mercury or some caustic to influence it.

About the only information we have about leucoplakia is that if left alone it may rarely result in malignancy, and about the only thing we can do for it from a therapeutic standpoint is to give the patient an alkaline mouth wash, to keep them from using hot coffee, tea or irritating condiments. If kept free from irritation and the mouth frequently cleansed with alkaline solution the danger of malignancy is remote. I am aware of no treatment that is beneficial.

One reason for reporting these cases is the hope that if any one happens to see a patient with leucoplakia irritating treatment will not be used. Caustics and irritants have a tendency to simulate the development of malignancy.

*Clinical report before the Louisville Medico-Chirurgical Society, February 9th, 1923.

FERMENTATIVE DIARRHOEA*

By James W. Bruce, Louisville

At the last meeting of this society we had the opportunity of hearing a splendid paper on "Colitis."* It will be well first to go over the differential points between colitis and fermentative diarrhoea, as the two diseases are so often confused. Colitis is infection of the intestinal wall with ulceration of the mucous membrane. It is usually caused by the dysentery bacillus. It runs a prolonged febrile course of one to three or four weeks. The stools contain mucus, pus, and blood. Fermentative diarrhoea is infection of the intestinal contents. There is rarely any involvement of the intestinal wall. Fever almost never lasts longer than two or three days. The stools contain mucus, but rarely streaks of blood and almost never pus. Typical cases of either disease are easy to diagnose, but borderline cases are very difficult. Indeed, one disease may be complicated by the other

Etiology. Fermentative diarrhoea is caused by bacterial infection of undigested food residue. The bacteriology of the disease has never been worked out satisfactorily. No organism or group of organisms has been incriminated. It is known that normally the upper part of the small intestine is almost sterile, while in cases of fermentation this

*Dr. P. F. Barbour, Kentucky State Medical Association, 1921, Louisville.

Read before the Kentucky State Medical Association, Paducah, 16, 17, 18, 19, 1922.

region is thickly populated with the usual intestinal bacteria, e. g., B. coli, streptococci, etc. A very plausable etiologic explanation is therefore as follows: under certain circumstances a large amount of undigested food residue is left in the upper part of the small intestine. This may be due to over feeding or to failure of the digestive juices to function properly. This residue is attacked by the normal inhabitants of the intestinal tract and fermented, and toxic irritating products are formed which irritate the gut and cause increased peristalsis and outpouring of mucus. The food elements involved in this process are largely carbohydrate and to some extent, fat. Protein is rarely affected. We know that fermentation of fat and carbohydrate is acid and makes peristalsis active, while putrefaction of protein is alkaline and makes peristalsis sluggish. This fact is of the greatest importance in treatment and will be discussed later. The discharges in fermentative diarrhoea are practically always acid.

Contaminated milk undoubtedly has much to do with the etiology, but we also see many cases in babies which are fed carefully sterilized food. Anything that lowers digestive function is likely to bring about diarrhoea, such as atmospheric pressure in summer; clothing too warmly; parenteral disease, such as otitis media, pneumonia, pyelitis, etc. Overfeeding and improperly prepared foods are the commonest couses.

Symptoms. The symptoms of this disease are so familiar to us all that we will run over them quickly. The onset may be sudden, as after a dietary indiscretion, or gradual, taking several days. Moderate cases usually have no fever, but severe cases have fever which rarely lasts after three or four days. There is always some prostration and in severe cases this is as marked as in any disease. The buttocks are scalded by acid discharges and may become perfectly raw. Vomiting is usually present in the beginning of an attack, but does not continue throughout. Persistant vomiting is a serious complication. Stools at first are fecal and undigested and contain some mucus; later they become green and watery. In uncomplicated cases of fermentation they do not contain blood or pus.

Prognosis. The prognosis depends on the age and previous condition of the child and severity of the infection. Most of us have had the harrowing experience of seeing perfectly healthy babies die in less than twenty-four hours. These cases are probably due to grossly contaminated food. When we realize that the mortality from diarrhoea in infancy—most of which is due to fermentation—is greater than the total mortality—all ages included—from typhoid, diphtheria, whooping cough, scarlet fever, and measles, we can appreciate the scourge this disease is. Babies[2] that have been fed excessive amounts of carbohydrate, especially those fat, overweight babies that have been raised on sweetened condensed milk, have little resistance to diarrhoea. Proper medical treatment early in the disease is a most important factor in prognosis.

Treatment. Treatment in fermentative diarrhoea has two objects:

1. Control of diarrhoea.
2. Control of water loss and prevention of acidosis.

1. Control of diarrhoea is usually the easier problem of the two. As we said a while ago, practically all of these cases are due to acid fermentation of carbohydrate and to a lesser extent, of fat. Protein is almost never involved and for practical purposes can be disregarded. We know that putrefaction of protein produces alkaline stools and inhibits peristalsis, while fermentation of carbohydrate produces acid stools and stimulates peristalsis. The two processes, therefore, are antagonistic and one can be used against the other. That is, constipation can be controlled by feeding carbohydrate, and diarrhoea can be controlled by feeding protein. This is the conception underlying the use of protein milk in these cases, for protein milk is the instrument above all others for controlling fermentative diarrhoea. It is a combination of cottage cheese and buttermilk, with most of the sugar washed out. We need not go into the technique of its production, which is very difficult, for it can be obtained in the form of dry powder on the market[2]. It contains 2.5 percent fat, 1.5 percent sugar, and 3 percent protein. Cottage cheese or calcium caseinate in powder form can also be bought on the market and protein milk can be made by adding this powder to the milk mixture[3].

Routine treatment for a case of fermentative diarrhoea of moderate severity would be as follows: If the case is seen early—first 24 or 48 hours— unload the bowel with castor oil or calomel. *Then give no food at all for 24 hours.* This starvation period is essential. Catharsis is useless unless the patient is starved afterward. Water must be given freely, as will be discussed later. After 24 hours give protein milk, diluted at first, gradually increasing in strength and quantity as the stools improve. It must be understood that babies will not gain weight on protein milk alone. As soon as the stools become yellow and formed, indicating the disease has been controlled, carbohydrate in some easily di-

gested form should be added to the food. Protein milk is a medicine to check diarrhoea and not a sustaining food.

Drugs do a certain amount of good but are of secondary consideration. Compound chalk mixture and bismuth are helpful and can be given freely without fear of doing harm. Paregoric is a dangerous drug unless used with great discretion. If given before the toxic fermentation products are thoroughly swept out, it will lock them in the bowel and cause them to be absorbed with bad or even fatal results. After the bowel is unloaded, however, it can be used cautiously. Colon irrigations of 1% soda solution are helpful in clearing away toxic material and can be repeated several times during the first 24 or 48 hours. After that, once or twice a day is sufficient.

(2) *Water Loss.* If water is lost from the body faster than it is taken in, a state of negative water balance exists and life is impossible for very long. This condition is present in severe cases of vomiting or diarrhoea. If all stools are collected and weighed for 24 hours, they will amount to several pounds in many cases. This is almost pure water loss. Everyone will agree that it is very difficult to make babies drink several pints of water a day. Patients with negative water balance quickly lose weight, the skin becomes dry and leather, the face takes on a pinched, ape-like expression. Very little urine is excreted—or none at all—with the result that toxic materials normally eliminated through this channel, remain in the body. Notable among these retained products are metabolic acids, such as acid phosphates. Accumulation of these acids leads to acidosis, and acidosis is the usual cause of death in severe cases of diarrhoea. Also abnormal amounts of acetone bodies are produced by the starving tissues.

Acidosis is much easier to prevent than cure. From the start infants should be forced to drink as much fluid as possible in the form of weak barley water, weak tea, or plain water sweetened with saccharin. Rectal injection of fluid or Murphy drip has never been successful in my experience in these cases. Alkali in the form of sodium bicarbonate should be given—one or two teaspoons a day is desirable in bad cases. It is frequently impossible to give sufficient fluid and alkali by mouth. Fluid can be given as normal saline or glucose solution by hypodermoclysis or intravenously or by intraperitoneal injection. Soda can be given intravenously but never under the skin or into the peritoneum because of danger of slough of the tissues. Glucose is most valuable in preventing acidosis. It can not be given by mouth because it will increase fermentation, but it can be given in the ways mentioned above. Only chemically pure glucose can be used for this purpose.

We cannot leave this subject without due consideration of the methods of prevention of diarrhoea.

1. Babies must not be dressed too warmly in summer. Neither must they be allowed to get chilled. Diaper and band are frequently all the clothing necessary in hot weather.

2. Plenty of water to drink and frequent bathing are essential for obvious reasons.

3. Greatest care in preparation of food. Green vegetables and stewed fruits should be cooked until tender and mashed through a ricer for babies under two years and used sparingly in hot weather.

4. All milk should be brought to a boil during the hot months—May to October. This is to insure sterilization. Objections to this are two: First, the water soluble C or antiscorbutic vitamin is destroyed. However, all babies should receive fresh orange or tomato juice every day and not depend on the milk for this vitamin. Second, boiled milk is constipating. This is a real objection. The best way around it is to culture the milk with a pure culture of lactic acid producing bacteria, such as the Bulgarian bacillus. This cultured milk is not constipating. The simplest way to make cultured milk is as follows: Allow sweet milk to stand at kitchen temperature until it turns to clabber. It may take two or three days. Then break up the curd thoroughly with a churn or egg beater. Add one tablespoon each of cane sugar and wheat flour for each quart of sour milk and boil one minute. Pour into sterile bottles, cork, and put on ice. After the first milk is soured it will not take so long to make it; just add one ounce of unboiled clabber from the previous day's supply and sweet milk will always clabber in 24 hours at kitchen temperature. Cultured milk can also be made from tablets containing pure cultures of the bacilli. In this case it is better to boil and cool the milk before introducing the culture.

(1). Holt—"Diseases of Infancy and Childhood," p. 344—1922.
(2). Protein Milk made by Hoos & Co., Chicago, or Merril-Soule Co., Rochester, N. Y.
(3). Calcium Caseinate made by: Meade-Johnson, "Casec" Dry Milk Co., "Protolac" or Hoffman LaRoche Chemical Co. "Larosan."

DISCUSSION

W. J. Shelton, Mayfield: Improper feeding and heat are perhaps the chief factors in producing Fermentative diarrhoea. A small percent is caused from external infection. More than 95 per cent of the severe cases is among the artificially fed infants. In fermentative Diarrhoea there is no anatomical lesions in the intestines,

the diarrhoea is not the result of inflammation as it is in Dysentery. In simple diarrhoea the withdrawal of food always has a good effect and frequently the disease will stop without further treatment.

Diarrhoea as the result of parental infection is usually milder than that caused from improper feeding and calls for less changing in the diet. We have come to rely upon diet as the chief factor controlling diarrhoea. It can be easily understood that when a child is overfed there is unused food in the intestines and this food is being decomposed by bacteria, if we put more food into the intestines it is adding more fuel to the flame.

During hot weather the infant requires less food and utilizes less. It requires more water, the indication is to feed a more diluted formula. A simple method of accomplishing this is to pour out so much milk and put in the same amount of water, have both water and milk sterilized. All milk should be boiled 3 minutes. It is more digestible, it leaves the stomach quicker. The only disadvantage is the destruction of the antiscorbeutic properties which can be supplied with orange or tomato juice. If it is not sterilized by boiling, the bacteria gets the food and the baby gets the toxines produced by the bacteria.

Constipation is seldom more frequent with boiled milk than raw and diarrhoea is much less likely to occur. I like whole lactic milk with sugar or K. S. and a little barley flour, you can boil it with the starch in it and it should be boiled 20 minutes. The lactic milk is good for the diarrhoea and the flour is good for the vomiting. Another formula I like is boiled skimmed milk with teaspoonful of 10 per cent solution of argyrol to 4 ounces of milk given every feeding or one or two days, or you can use a teaspoonful of the argyrol to 8 ounces of water and let him drink it as he wants water, or use argyrol in both water and milk.

In mild diarrhoea reduce the amount of sugar in the diet, if more severe use skimmed milk with argyrol, if still more severe use lactic or protein milk, protein milk should always be used in the severe cases. Dr. Bruce gave sufficient reasons for this in his splendid paper. Nutrition must be kept up, food must be given as quickly as it can be digested, large quantities of water should be given throughout the disease, perhaps the greatest danger of diarrhoea in infants is the destruction of body tissues. They burn their own bodies for fuel. If a child dies of simple diarrhoea it is because it doesn't get enough water and food. This is the whole matter.

Two things take place in diarrhoea. In one your patient gradually dies, as in marasmus, the other is the one that dies in 48 hours; one wastes away, slowly burns up his body in addition to what little food he gets, the other quickly becomes dehydrated and the blood volume becomes depleted as shown by Marriott. The patient can't use the amount of food that is necessary for him to have in order to live unless you increase the volume of blood so that he can take it up. When the elimination of water is greater than the intake, we have a condition that can not exist long without death. For the infant's body is about 70 per cent water.

If the baby vomits the water, he must have it some other way. Normal saline or Ringer's solution can be given by hypodermoclysis or intraperitoneal injections or intravenously also 1-3 ounce 10 per cent solution of glucose per lb. per body weight can be given this way. An abundance of water is the best treatment for acidosis. In some cases where there is difficult breathing from acidosis an alkali is beneficial.

J. R. Morrison, Louisville: I wish to discuss briefly the paper of Dr. Bruce. While I am not a pediatrician, I am always interested in pediatrics from the standpoint of the study of nutrition. I think the point Dr. Bruce brings up should be borne in mind by all practitioners, because all doctors treat their own babies or the babies of others, whether they be pediatricians or general practitioners. It is well to differentiate between fermentation diarrhea and colitis. I rarely see a case of infective colitis at the Children's Hospital except in the early summer and the late fall. On the other hand, the fermentation diarrhoeas are frequent. What should be our plan of treatment in children with fermentation diarrhoea that are vomiting? We should stop food and give them a dose of castor oil or calomel, and many times you can use patent medicines or proprietary foods with advantage. You can give these patients from one to four teaspoonsful of food every four hours. I do not think it is wise to give them malt sugar.

Another thing: We give these children broths with a little of the starchy foods, ice cream and wheat. The point is, we need starches to cure the fermentation. The proteins of milk can be made if you have a good laboratory, or they can be bought. A good patent medicine put up by a reputable and reliable firm and rightly made, can be used with benefit. The children do not like it very well at first, but if you put saccharin with it they will take it. If you watch the stools after they take this protein milk, you will see the reason it is a good thing.

Liquid Petrolatum.—A report is made by Russell and Brett on the action of liquid petrolatums of widely varying viscosities. He states that a product of viscosity 230 gave more satisfactory results than one with a viscosity of 130. The authors strongly recommend that a viscosity standard of not less than 180 should be adopted. The viscosity figure is the time in seconds taken by 50 c.c. of oil maintained at 100 F. to flow out from a Redwood viscometer.

SACRAL ANESTHESIA IN OBSTETRICS.*

By S. P. Oldham, Owensboro

Painless childbirth is a subject that is universally discussed by the medical profession, as well as the laity. There is no question but that the world is growing weaker and wiser. This is clearly demonstrated in obstetrics. Childbirth is becoming a more difficult problem with the coming of each generation. The expectant mother is familiarizing herself and is becoming well versed through the press and various magazines of the advancement of the scientific method of relief to be had and are determined that they receive the advantage of them. There may have been a time when the profession believed that, as labor is a physiological process, nature must take its course, and the expectant mother must writhe in pain: Yea, go down into the valley and the shadow. But the modern obstetrician has raised beyond this maxim, and we no longer believe that the pains are not real and agonizing. The demand for better and safer anesthesia must be respected and to my mind sacral anesthesia comes nearer meeting this demand than any other method up to the present time. No other phenomena connected with the life history of the human race has been so great a factor in the historic development of medicine as pain, though the most universal symptom of disease it is the least understood.

Pain is a sensation of physical discomfort conducted over nerve paths. Local anesthesia blocks the nerve paths and prevents traumatic reflexes. As I enter the field of sacral anesthesia in obstetrics I do so with a well grounded belief in its virtue observed by two years of experience in its use, and the observation of the wonderful relief it affords the patient. After diligent search of all the medical literature obtainable and in correspondence with numerous obstetricians throughout the country, I have been unable to find any one using this particular technique of anesthesia in obstetrics in this country, and, in view of this fact, it is but natural that I should feel sure of my procedure for fear of censure lest some one would quote the old maxim, "Fools stalk bravely where Angels dare to tread." But with a steadfast belief in the virtue of sacral anesthesia, I wish to make a plea for its use and am most emphatic when I say that in the field of obstetrics it is of the greatest value.

Very recently and since the beginning of the preparation of this paper have I found that Wm. J. Scheelekin of Amsterdam, has reported eight cases after the use of sacral anesthesia in obstetrics, and in this paper I shall embody his report together with some cases of my own.

With the technique of sacral anesthesia, we are enabled to anesthetize the entire pelvic floor. The levator and sphincter muscles together with the perineum are thoroughly relaxed, enlarging the outlet to a considerable degree, thereby preventing laceration.

Blocking of the sacral plexus by intraspinal injections is one of the most satisfactory procedures in the field of local anesthesia. Intra-sacral injection produces a pure nerve blocking and not a central anesthesia.

ANATOMY

The dural sack of the spinal cord ends opposite the lower border of the second sacral segment. The terminal bundles of the caudae equina passes through the dural sack into the sacral plexus, consisting of the sciatic and pubic nerves. The lower end of the sacrum which interest us most presents a notch or triangle due to the lack of development of the spinous processes on the lower extremity. On each side of this triangle is a bony prominence called the sacral crown which articulates with the coccyx. At the apex of the triangle is found the sacral hiatus, a bony canal which opens into the sacral canal. This canal is covered by the sacral cocygeal ligament, which closes it.

TECHNIQUE

The patient should be placed on the right side near the edge of the bed or the table, as the case may be, with legs drawn up as near the chest as possible. The last sacral spine shall now be palpated with the left hand. Immediately below the spine is the sacral triangle with the hiatus at its apex. (This point is very readily made out in the thin person but rather difficult in the fat.)

Under strict aseptic precautions the skin and subcutaneous tissue over this region is now anesthetized with procain, using small needle. This enables us to make the injections free from pain. The long needle now being used is introduced through the center of the hiatus at right angles to the skin, but as soon as the membrane covering the hiatus has been punctured the needle is now depressed so that it points upward, and lies nearly parallel with the skin surface. The needle is now pushed upward in the mid-line following the canal for a distance of one and one-half inches. When the needle is in the sacral canal the point should convey the sensation of being in a free space. The syringe is now attached to the needle and twenty c.c's of a two per cent solution of procain with a little epinephrin is injected into the canal, being careful to avoid

*Read before the Kentucky State Medical Association, Paducah, October 16, 17, 18, 19, 1922.

blood vessels. If a blood vessel is entered blood will appear in the syringe. In this case blood being mixed with solution renders it inert, thereby failing to anesthetize. The patient should now be turned on her back in order to get a free distribution of the anesthetic. In this manner the anesthetic is distributed to and blocks the sacral plexus, and a few terminal filiaments of the cocygeal plexus.

TOXICITY

All known drugs which have the property of producing local anesthesia are toxic. All local anesthetics are protoplasmic poisons with a greater or less affinity for nerve cells. It is self evident that any substance which possesses the property of suspending the activities of nerve cells either temporarily or permanently may cause death if brought in contact with nerve centers or nerve fibres in sufficient strength. Procain, the drug that I use in sacral anesthesia, is relatively non-toxic, being considered about one-eighth or one-tenth less toxic than cocain, yet I would not attempt to leave the impression that it is entirely harmless, for any local anesthetic injected directly into a blood vessel of nerve fibre may produce death, but with my experience with this drug in sacral anesthesia, consisting of a series of more than two hundred deliveries, I have had no untoward effect. Lewan has injected as much as 30 to 40 c.c's of a two per cent solution with no toxicity.

TIME OF ANESTHESIA

The duration of the anesthetic extends from forty-five minutes to two hours. This entirely depends upon the strength and distribution. I first began using the one per cent solution but found that I did not get uniform distribution and the anesthesia was of short duration so I began using the two per cent solution, and since, my anesthesia has been more complete and of very much longer duration requiring about ten to fifteen minutes from the time of injection to the completion of anesthesia.

In using the technique in obstetrics one must exercise good judgment, first in selecting the stage of labor and the time for the injection during this stage. In the primipara the injection should not be made until the presenting part is at or under the symphysis while in multipara it may be given at the completion of the first stage. Experience and practice alone must govern this. The severity of uterine contraction and the frequency of pain must also be taken into consideration. I verily believe that by the use of small doses of morphine and scopolamine in the first stage and sacral anesthesia in the second stage, childbirth can be made comparatively so, if not quite, painless. To my mind sacral anesthesia is safer and more preferable than is general anesthesia.

First: It facilitates delivery, the uterine contractions continue under the anesthesia, the blood pressure in the uterine sinuses is greatly reduced and hemorrhage during the delivery is distinctly less than under general anesthesia. When empty the uterus contracts promptly and secondary hemorrhage after delivery is unusual.

Second: It is available at all times being inexpensive and is within the reach of all classes and with strict aseptic precautions, can be used in the hut as well as in the mansion.

Third: It reduces cardiac and pulmonary pressure.

Fourth: The patient with the assurance of the absence of pain being thoroughly conscious, freely co-operates with the obstetrician, relaxing or pushing with each pain as requested so to do, by so doing the obstetrician has the honor of being master of the situation at all times.

Fifth: It is a great satisfaction for every one concerned to see a patient come from the delivery room feeling as bright and cheerful as when she entered rather than that weary, worn and exhausted expression from a general anesthetic.

CASE REPORTS

In my report of cases I shall take the liberty of reading you abstracts from a paper written by William J. Scheelekin, of Amsterdam, on painless childbirth, written October 22, 1921. Scheelekin gives the reason for his hope that the twilight sleep method will never get a foothold in the Netherlands by denouncing any form of general anesthesia as dangerous for the child. His experience with sacral anesthesia, however, has been quite favorable as he explained he has applied it to five primiparas and three multiparas and in two cases the child was born before the effect of the anesthetic was felt which requires from ten to fifteen minutes. In all cases the sensibility was materially reduced although the contractions of the uterus were felt it was merely a dull sensation of pressure, even when the skull was passing not a sensation of pain. He followed the epidural injection method injecting 20 c.c.'s of a two per cent solution of procain and a little epinephrine through the sacral opening. The multiparas were emphatic in the appreciation of the painless course of delivery. The tendency is for it to be applied too early in primiparas and too late in multiparas. He gave a second injection of 10 c.c.'s in two cases and not the slightest effect on the child could be detected. A great advantage of this

method is the relaxation of the muscles of the pelvic floor.

The cases I shall report will illustrate the various expression of the patient in the use of sacral anesthesia. In a series of over two hundred deliveries, I shall only report a few consisting of both primiparas and multiparas.

Case 1. Mrs. A., primipara, 18 years of age, well developed, weighing 122 pounds, came into labor at 6 a. m., pains being at fifteen minute intervals, examination revealed L. O. A. 6:30 p. m., pains came on at five minute intervals; 8:10 membrane ruptured; 10:25 complete dilatation; 11:40 anesthetic injected, ten minutes complete anesthesia; 12:35 baby delivered. Mother's expression: I am more than agreeably surprised at the absence of pain. I could feel the child pressing down but no pain.

Case 2. Mrs. B., primipara, age 26, weighed 126 pounds, came into labor at 10:15 a. m., examination revealed L. O. A., pains came on eight to ten minutes intervals; 12:00 m., pains coming on three to four minutes intervals; 1:20 membranes ruptured three fingers dilatation; 2:45 complete dilatation; 3:15 anesthetic injected; 4:15 floor of the perineum bulging; 4:45 no appreciative progress; 5:00 p. m., low forceps operation; 5:15 ten and half pound baby delivered. This mother said she felt no pain and I am sure she did not for there was not an expression of the slightest discomfort during delivery. In this case there was a second degree laceration which was repaired at once entirely free from pain.

Case 3. Mrs. Q., primipara 2, age 24, weight 111 pounds, examination revealed L. O. A., came into labor at 5:10 a. m., 7:20 a. m, complete dilatation anesthetic injected; 8:10 delivery complete with the exclamation, "I felt no pain."

Case 4. Mrs. B., primipara 6, age 38, weight 176 pounds, in religion a Holy Roller, came into labor at 1:00 a. m., pains coming at five minute intervals; 2:25 complete dilatation anesthetic injected; 2:50 delivery complete with the exclamation, "For more than two months I have been praying that I might be delivered without pain and my prayers have been answered, Glory to God." In this case, of course, anesthesia claims no credit.

Case 5. Mrs. G., primipara, age 22, weight 98 pounds, came into labor 8:15 p. m., with membrane ruptured. Examination revealed breech presentation, pains ranging from five to twenty minutes intervals; 2:00 a. m., pains coming three to five minutes intervals; 3:55 a. m. dilatation complete; 4:00 a. m., forceps applied; 5:45 delivery complete. Expression from the mother, "I could feel something coming down when you pulled, but felt no sharp pain."

Case 6. Mrs. H., para 2, age 24, weight 112 pounds came into labor 3:20 a. m., examination revealed left occipito anterior, pains coming twenty to thirty minutes intervals; 7:30 p. m. entirely free from pain; 8:00 p. m. castor oil 1 oz. given 11:00 p. m., five grains capsule quinine given every hour until twenty grains had been taken; 7:25 a. m. pains coming five minutes intervals; 9:30 complete dilatation injection given; 10:40 delivery complete. This patient suffered intense pain in the back but was entirely relieved after the injection of the anesthetic and suffered no pain thereafter.

I could go on reporting case after case with equally as gratifying results if time would permit, but with the foregoing case reports together with the report of cases from the Netherlands should be conclusive of the virtue of this technique.

There is no doubt that in the last few years obstetrics has made rapid strides toward painless delivery and with the coming generation that fear of pain which haunts the mind of the expectant mother shall be dispelled. And may I venture the assertion that sacral or lumbar anesthesia in some form shall be the accepted method of securing painless childbirth.

DISCUSSIONS

E. G. Thomas, Benton: I want to say this about this form of anesthesia, its results, its effects, and its practice: it is something that I am as ignorant of today as I was the day I was born. I really do not know anything about it. I do not know that I can condemn or endorse it. The essayist has had an experience that is unusual, and I would suggest to the younger practitioners that they study this method of anesthesia carefully, practice it to a point where there is no danger and learn exactly what it will do. If there is a human being this side of heaven that is more deserving of comfort than a woman in childbirth, I do not know who it is. Let us learn the method and know for sure whether Dr. Oldham is right, or teach other practitioners that he is wrong.

I think he has presented to us a wonderful and interesting paper, and I have no doubt he is as conscientious as he can be and is just as truthful as he can be. I know nothing about the method practically to the contrary notwithstanding, but that is my sentiments.

Vernon R. Jones, Shelbyville: I have been engaged in the practice of medicine for fifteen years and was fortunate enough in my medical training to come in contact with a man who believed in twilight sleep. I have been practicing that as near as I could for fifteen years, and if there is

ever a pain on earth that should be relieved, it is the pain of childbirth. I remember a few years ago a young doctor started to practice in a certain county in the state. He was an eclectic physician. He was called in to see a woman who was having some abdominal pain, and he said, "My good woman, you will soon get easy; I have been that way many a time." (Laughter.) He further said, "If you do not get along well, let me know." They called another doctor and he delivered the child. The first doctor did not know the real condition of the woman. Most women in labor desire some form of anesthetic to relieve pain.

I think Dr. Oldham has brought before us something new and something worthy of consideration. I have not used that method, but I will investigate it and try and see if we cannot get something which is an improvement over the method I use. We are constantly looking for something better. I have used nitrous oxid in these cases and have had success.

Dr. Oldham is to be congratulated on the modern steps he has taken in this paper.

S. P. Oldham, Owensboro (closing): I appreciate very much the discussion on my paper. Perhaps it is something new to the profession, but I wish to make a plea to all the men to study the anatomy of the sacrum, and to study the technic of sacral anethesia, and after you have done so, if you wish to render to your patients any service whatsoever in the alleviation of pain, you will take up sacral anesthesia. I have been using it for two years; I have been conservative in its use, and I know whereof I speak, and I only ask that those of you who are interested in obstetrics take up this technic and master it. I think you will like it and continue its use.

THE DIAGNOSIS OF INCIPIENT TUBERCULOSIS.*

By Clifton Richards, Glasgow

The importance of an early diagnosis of pulmonary tuberculosis can not be overestimated since the subject of tuberculosis has occupied the minds of medical investigators since antiquity. Hippocrates was the first to give an intelligent description of phthisis and it is especially interesting to note the different etiological opinions advanced by Hippocrates and his successors until the final discovery of the tubercle bacillus by Koch, and the placing of the etiology of tuberculosis on a scientific basis. There is no disease known to the modern internist where more elaborate methods of diagnosis have been perfected; and, as we all know, there is no more complex problem than the making of an early definite diagnosis of tuberculosis, in order to enable us to arrest the disease and it thereby becomes inactive.

The clinical history of the case if seen early enough is the greatest single asset of the physician in order to outline a plan of attack and will do more to arrest the progress of the disease than any other one mode of procedure of investigation. Slight fever, languor, loss of weight, general lassitude, perhaps night sweats, slight cough; this syndrome group after a careful physical examination, will give the doctor a proper interpretation of the case and a prognosis which will be in keeping with the seriousness of the condition.

The physical examination of the chest is important in incipient phthisis but is often very disappointing in regard to finding positive data.

Percussion: In some patients the first change on percussion will be a shortening in the percussion note duration.

Auscultation: Perhaps the first physical signs of incipient tuberculosis will be found on auscultation. Examination of apices for altered vesicular murmur, for increased vocal resonance, through the different grades until bronchophony is reached and in cavity formation even pectoriloquy, should be routine. Rales are rare in incipient tuberculosis on quiet breathing. Post-tussel rales are very pathognomonic in incipient tuberculosis.

The laboratory furnishes the clinician a valuable aid to check up on his physical examination. The examination of the sputum should be routine. However, a negative finding of the tubercle bacilli should not warrant the physician making a negative diagnosis of tuberculosis. Repeated examinations should be made and repeated negative findings should not be conclusive if the clinical history and the course of the illness are suspicious of tuberculosis.

The blood picture will show perhaps an absolute decrease of leukocytes and a relative increase of lymphocytes. However, in pulmonary tuberculosis a progressive increase of lymphocytes is a favorable prognostic sign, thereby showing a more active resistance to the disease on the part of economy.

Von Pirquet's subcutaneous test was at one time very popular, but has practically been discarded.

Roentgen rays are perhaps the most helpful of all accessory measures in the examination for pulmonary tuberculosis and examinations should be made by an expert who has made a very painstaking study of the relation of the anatomy and physiology of the

*Read before the Barren County Medical Society.

thoracic cavity to the many variations to be found in the pathological state.

Since the question of a diagnosis of tuberculosis is fraught with such tremendous possibilities, the whole life course of the individual being thereby altered and the death rate being so heavy (even in our fair commonwealth 7%.) I can not leave the subject without saying that we physicians should spare no effort to secure the co-operation of the patient in matters of constitutional treatment, sanitation and education in order to eliminate as far as possible the gaunt spectre of the White Plague.

THE INSULIN TREATMENT OF DIABETES MELLITUS.*

By R. Hayes Davis, Louisville

Before taking up the discussion of the treatment of diabetes with insulin and the report of some forty-two cases which I shall present, it would be well to describe very briefly what is meant by Insulin. This is an extract made from the Islands of Langerhans. Insulin was first separated by Drs. Banting and Best, working in the physiological laboratory of Dr. Macleod, of Toronto, Canada. The various phases of the experimental work necessary to perfect this extract is very interesting, but time will not permit further detail in this paper. After a satisfactory product was produced, the process was given to the firm of Eli Lilly & Co., for the purpose of securing wide spread distribution, and they have succeeded in producing from pancreatic glands of slaughtered hogs an extract which is highly potent, carefully standardized, and staple, and in sufficient quantity to supply demands. Insulin is first standardized by the effect which it has in reducing the blood sugar in rabbits and later by the effect which it has on patients who have been previously controlled by other extracts. By a unit is meant the quantity necessary to reduce the blood sugar in a rabbit, from which food has been withheld for 16 to 24 hours, to 0.045% within four hours after subcutaneous injection. The end point of 0.045% is chosen, as a lowering to this degree will produce a characteristic convulsion in the animal. The product of Lilly and Co., is called Iletin to distinguish it from the Canadian Insulin. When Insulin is injected into the human body it has a decided effect on the blood sugar. Usually within a half hour there is a distinct and definite lowering which continues for three or four hours, and is then followed by an increase. The actual time of onset and the duration of the lowered sugar is somewhat variable and depends upon the individual characteristics of the patient, the dosage of Insulin given, and the quantity and quality of food taken. The average time for measuring the maximum effect is ninety minutes to three hours after the extract is administered.

Theoretically Insulin will metabolize two to three grams of carbohydrate, but there is in certain cases a considerable variation, and the effect must be carefully studied on each patient. Even animals react differently, and it has been found that rabbits require a dose not in proportion to their weight, but as the square of their weight as compared to the usual rabbit of two kg. In other words, a rabbit weighing four kg. will require four times more Insulin than a rabbit weighing 2 kg., and a rabbit weighing six kg. will require nine times as much. This may be a factor of considerable importance in the human subject, as I have one patient, a man weighing over two hundred pounds, who has required extremely large and increasing doses over a period of a week before he became sugar-free.

The exact reaction which leads to the lowering of the blood sugar has not been determined, however, and certain conditions that are not clear now may be explained in the future. McCormack, Macleod, Noble and O'Brien have elaborated the theory that sugar must disappear from the blood because it passes into the tissues, and Insulin no doubt also passes out of the blood into the tissues, and when it enters the tissue cells it sets up in them some process which leads to the immediate disappearance of sugar as such, so that a "vacuum" for sugar is created in the cell, and sugar is withdrawn from the blood more rapidly than it can be replenished. This is a plausible theory. Is it not possible too that Insulin may require the aid of some other element for its action just as an amboceptor requires the aid of the complement? This might explain why Insulin has a different action in certain different cases.

If a proper quantity of Insulin is administered, there will be a fall in the blood sugar to a normal level. If the dose is too large, the decrease may be sufficiently great to produce definite symptoms whose severity is dependent upon the degree of reduction. If the sugar falls to a level of 0.07% the patient becomes promptly aware that something is wrong. He becomes anxious and nervous and feels tired and weak, and at times he may lose his emotional control and weep. He is tremulous and may lose to a certain extent his co-ordination of movements. There may be palor or flushing and a profuse sweat is usual. If the temperature is taken, it is usually subnormal. If the sugar continues

*Read before the Jefferson County Medical Society.

to fall and reaches a level of 0.05% there is an acute distress or mental disturbance. The patient is confused, and there is disorientation and at times there is difficulty in articulating. There is also a variation in the reaction as compared to the blood sugar under certain conditions. On of my patients, a very severe diabetic (Case No. 23) developed the latter symptoms, and a blood sugar made at the time was only 0.10%. If the sugar falls to 0.032% there is coma, and death soon follows, unless prompt relief is given. Fortunately if these symptoms are recognized they can be promptly alleviated by the administration of carbohydrates, perferable in the form of orange juice or sugar. Fifty to one-hundred cc. of orange juice, or better five to twenty-five grams of glucose with orange juice, should be used, the quantity depending on the symptoms. It is advisable, if the patient is walking about, to have him carry in his pocket several loaves of sugar to be used if an emergency should arise. If coma exists a hypodermic injection of 1 cc. of 1 to 1,000 Epinephrin should be administered, and if the patient can not swallow, then glucose should be given at once intravenously or even subcutaneously, if for any reason the intravenous method can not be used. If patients are getting large doses at night, they should be carefully watched, as the reaction might occur during sleep.

I shall now proceed to a report of cases after which I shall take up a discussion of their treatment. These cases are taken from my diabetic records since I began the use of Iletin in November, 1922. Some of them did not need Insulin but are cited for comparison, but in many of them it was a great necessity. The reports in this paper can be given only briefly, but with the consent of this society, I trust to report at a little later date with lantern slide, a series of charts showing the complete management of these cases and other cases that I now have under observation.

Case No. 1. Age 60. Female. Original weight 170 pounds. Diabetes many years. Fasting method treatment with gradual increase. Present diet: Carb, 70, Protein, 76, Fat 140, Calories, 1844. Present sustained weight 145. Blood sugar after food now 0.187%. This patient can exist quite satisfactorily on present treatment, but the strength and endurance can be greatly increased by the addition of more food with the aid of Insulin.

Case No. 2. Age 52. Female. Weight 177½ lbs. Diabetes of only few months' duration. Blood sugar 0.240%. Present diet: Carb. 165, Prot., 87, Fat 154, Calories 2394. Present weight stationary at 161 lbs. Present blood sugar 0.162%. Insulin not necessary.

Case No. 3. Age 38. Male. Weight 170½ lbs. Gradual starvation and increase in diet treatment. Present diet. Carb., 155. Prot. 80, Fat, 99. Calories 1831. Weight stationary at 160½ lbs. Insulin not necessary. Blood sugar 0.135% after food. Diet could unquestionably be increased without insulin.

Case No. 4. Age 55. Female. Weight 151½ lbs. Original blood sugar 0.428%. Gradual starvation and increase in diet. Present diet, Carb., 63. Prot., 66. Fat, 130. Calories, 1676. Blood sugar 0.167%. If this case were in the city, I should give Insulin to get higher tolerance.

Case No. 5. Referred by Dr. Murphy, of Salem, Indiana, Age 50. Weight 192. Diabetes of long standing with repeated pulmonary hemorrhages, severe cough, and elevation of temperature. Blood Sugar 0.554. Treatment began before Insulin, and case cited to show excellent results obtainable in certain cases before advent of Insulin. This patient required prolonged starvation treatment. Diet on discharge: Carb, 40, Prot. 60. Fat 120. Calories 1480. Patient has gradually increased diet according to instructions and has never shown sugar since leaving hospital. Is now doing hard manual labor with no signs of activity in the lungs, and last blood sugar after food was 0.163. He maintains weight of 165 lbs. Insulin would have greatly hastened this patient's recovery.

Case No. 6. Age 62. Diabetes long standing; Gangrene portion great toe and small infected area on heel. Usual low diet treatment. Steadily gained in tolerance to good maintenance diet of Carb. 63. Protein 70. Fat 136. Calories 1756. Foot entirely healed. Patient broke over a few weeks ago and necrotic area promptly returned in toe. He is a Greek and cannot speak English and is now under the care of a Greek physician. There is no need for Insulin in this case.

Case No. 7. Referred by Dr. T. N. Willis, of Louisville. Age 36. Male. Colored. Weight 220 lbs. Decided vesicular eruption over both legs with slight edema feet. Present diet, Carb. 159. Prot. 84. Fat 130. Calories 2142 and is still increasing. Insulin is entirely unnecessary in this case.

Case No. 8. Age 35. Present diet. Carb. 160. Prot. 84. Fat 127. Calories 2095. Sugar free. Insulin not necessary.

Case No. 9. Age 47. Blood sugar 0.176%. Was simply given diet of Carb. 159. Prot. 79. Fat 115, and after a few days sugar cleared up. Insulin wholly useless.

Case No. 10. Old case. Neurotic area in toe. Has not been sugar free for several years in spite of diets. Usual gradual starvation and increase treatment. Present diet Carb. 40. Protein 80. Fat 140. Sugar free

for weeks. Insulin could be used to give more palatable diet, but is not necessary. This patient will not take it, as she is so well and is perfectly satisfied.

Case No. 11. Referred by Dr. Murphy, of Salem, Ind. Age 58. Weight 176 lbs. Eczema. Blood sugar 0.230. Non protein nitrogen 31.5 mgs. per 100 cc. Urea nitrogen 14.2 mgs. per 100 cc. Uric acid 1.3 mgs. per 100 cc. Usual dietetic measures, and patient has remained in good condition on diet of Carb. 127. Prot. 92. Fat 150. Insulin not necessary.

Case No. 12. Age 64. Male. Weight 185 lbs. Intermittent glycosuria. Two hours after taking 100 gm. Glucose, blood sugar 0.272%. Case easily controlled by diet of Carb. 150. Prot. 84, and Fat 120. Calories 2048. This case could no doubt be controlled by low carbohydrate diet with unlimited protein and fat, but this diet is more palatable and is safer.

Case No. 13. Referred by Dr. Yandell Roberts, of Louisville. Age 31. Weight 148 lbs. Diabetes of few months' duration. Blood sugar 0.50%. By usual method diabetes controlled, and present diet of Carb. 140, Prot. 75, and Fat 136 keeps patient sugar free with weight of 136 lbs. Last blood sugar 0.115% after food. Insulin entirely unnecessary at present time.

Case No. 14. Referred by Dr. G. S. Hanes, of Louisville. Age 45. Male. Weight 179 lbs. Increased to Carb. of 200 gms., and easily controlled. Insulin wholly unnecessary.

Case No. 15. Referred by Dr. L. S. McMurtry, of Louisville. Female. Age 36. Weight 196. Marked dermatitis about vulva. Blood sugar 0.375%. Had sugar after 4 days' starvation. Was then put on low diet of Carb. 22, Prot. 13 and Fat 18. Calories 302. Was given Insulin five units before each meal and increased to ten units on second day when sugar disappeared. This patient developed good tolerance, but was obliged to leave hospital on account of illness of husband and has not returned.

Case No. 16. Age 22. Weight 103½ lbs. Very emaciated and extremely weak. Acetone bodies, two plus. Blood sugar 0.555%. Hemoglobin 50%. Red cells 3,170,000. With low diet and Insulin ten units three times a day, diet has been increased to Carb. 56. Protein 64 and Fat 134. Calories 1686. Patient gained 12 lbs. in two weeks, and strength has greatly increased. Present blood sugar 0.197% after food.

Case No. 17. Referred by Dr. Thos. K. Van Zandt, of Louisville. Age 60. Weight 109½ lbs. Very weak and regarded as hopeless by his physicians. His blood sugar was 0.535%. Non-protein-nitrogen 39.9 mgs. per cc. Patient put on low diet of Carb. 15, Prot. 5 and Insulin five units three times a day. Cleared up promptly and is now taking Carb. 42. Prot. 64 and Fat 115. Calories 1459. Strength is good and diet is being increased five gms. carbohydrates every second day. The blood sugar is lessening, the last determination being 0.20%.

Case No. 18. Patient of Dr. Louis Frank. Age 21. Female. Diabetic coma. Chronic cholecystitis. With the aid of Insulin symptoms promptly cleared up, and patient is now taking Insulin 20 units a day in two doses with a diet of Carb. 56, Prot. 64 and Fat 124. The last blood sugar was 0.15%, and condition of patient is excellent. I am quite certain that she will be able to do without Insulin before long, as she ran out of it and did not show sugar after three days.

Case No. 19. Age 61. Female. Weight 153 lbs. Diabetes for twenty years. Has had various necrotic areas of skin. Has slight edema of feet. Takes Insulin 20 units a day in two doses. Present diet. Carb 73. Prot. 71 and Fat 150. Calories 1926. Present weight 149¾. Last blood sugar 0.22%. Showed trace of sugar the other day, and Insulin was temporarily increased to three doses of ten units, each, but will soon be diminished gradually.

Case No. 20. Referred by Dr. H. C. T. Richmond, of Louisville. Age 64. Male. Old diabetic. Furunculosis. With Insulin 20 units a day is now taking Carb. 83. Prot. 80 and Fat 150. Present blood sugar 0.20%. Present weight 162 with original weight of 167 pounds. Had very low tolerance without Insulin. Was given very low diet in beginning.

Case No. 21. Referred by Dr. S. L. Beard, of Shelbyville, Ky. Age about 45 years. Female. Bedridden for weeks. Very weak and very drowsy at times. Extreme pains all over body and marked hypersensitiveness. Blood sugar 0.375%; non-protein-nitrogen 38.6 mgs. per 100 cc. Blood plasma C. O_2 tension 64.5 vol. percent. Acetone bodies in urine four plus. Was given Carb. 50, Prot. 10 and Insulin gradually increased to sixty units a day at which time patient became sugar free. Diet was increased to Carb. 98, Prot. 60 and Fat 88, and Insulin decreased to 45 units. On one occasion before Insulin, early in the morning blood sugar 0.3%, but with Insulin patient remained sugar free. Death however, occurred from exhaustion and heart failure, the patient dying from pulmonary edema with marked cyanosis and labored respiration.

Case No. 22. Patient of Dr. Ben Carlos Frazier, of Louisville. Age 59. Male. Case

of long standing who drifted away from Dr. Frazier about a year and just returned. Severe spreading gangrene of foot with deep sinus and marked sepsis. Blood sugar—0.451%. Non-protein-nitrogen 39.9 mgs. per cc. Plasma C O_2 tension 46.6 vol. percent. Was given Carb. 25, Prot. 50 and Insulin increased to 45 units on third day and forty units in one dose on fourth day. The symptoms, however, steadily increased, and no impression was made on blood sugar. On the fourth day the patient developed coma, but this was regarded as a termination of the sepsis, as the plasma C O_2 tension was only 35.7 vol. percent just three hours before death.

Case No. 23. Age 50. Female. Hemoglobin 75%. Red cells 3,330,000. Leucocytes, 25,000 with polymorphonuclears of 78% and lymphocytes of 17%. Old untreated case with very severe spreading moist gangrene with chills, fever and sweats. Various variations in treatment were used. At first Carb. 64. Prot. 33 with no fat and gradual increase of Insulin to 60 units a day, but no impression was made on the sugar. Then a low protein diet of 24 gms. was given for three days with no Insulin. Then a complete starvation for three days was tried, but still large quantities of sugar and acetone were excreted in the urine. Then a diet of 24 gms. protein and Insulin thirty units a day were given. Then 48 gms. protein and 60 units Insulin and blood sugar of 0.32% with four plus urinary sugar three hours after injection was the result. During the period of complete starvation there was a total nitrogen elimination for 24 hours of 5 gms. and sugar of 18 gm. showing a C N ratio of 3.60. After eighteen days of treatment there occurred an Insulin reaction of profuse sweating and stupor with inability to articulate but the blood sugar at this time was only 0.10%. The patient had two doses of Iletin of thirty units each, and the reaction occurred after the second dose. The next day she became sugar free in urine and again went into a stupor and was given immediately 300 gms. of orange juice, but died very suddenly. At this time the gangrene had greatly spread involving upper part of leg and patient was in extremis from sepsis. Large doses of Iletin finally rendered her sugar free, but the case was hopeless from the standpoint of the gangrene and sepsis.

Case No. 24. Referred by Dr. Hiram S. Eggers, of Louisville. Age 34. Male. This is the first case treated in Kentucky and is very interesting. This patient had been on a weighed diet for three months of Carb. 6, Prot. 76 and Fat 97, and still showed very marked glycosuria with four plus acetone bodies in urine. The blood sugar was 0.34%. He weighed 115 lbs., was extremely weak and quite dull mentally. Owing to weakness he was not starved but put on a diet of Carb. 22, Prot. 51 and Fat 70. Calories 922. On 40 units a day, the glycosuria disappeared, and he was then gradually increased to 63 gm. carbohydrates. Supply of Iletin gave out, and urine showed large quantity sugar and acetone bodies. Iletin was resumed in 40 unit quantity and after three days there still existed sugar in urine with fasting blood sugar of 0.30%. Carbohydrates were reduced to 32 gm. and after two days, sugar disappeared. The blood sugar on repeated examinations then ranged for nearly a month from 0.208% to 0.250%, and urine still showed acetone bodies of four plus. Owing to high blood sugar and dullness of patient with the decided acetonuria, Iletin was gradually increased to 80 units a day, and after first day of large dosage blood sugar was 0.159% but no change in acetone bodies occurred. The dose was then gradually diminished to ten units three times a day and finally down to ten units once a day, which was entirely sufficient. The blood sugar at this time was 0.187%. There was a lessening of acetone bodies to two plus. The diet was increased to Carb. 42 and patient remained sugar free. On two or three occasions Insulin gave out for several days and his wife failed to get a new supply as she did not find sugar. He has had no Insulin now for several weeks, but is no doubt sugar free, as she watches the urine closely and would most likely report at once if she found trouble. After prolonged use the Insulin produced a localized area of liquifaction necrosis at the site of injection which formed a crust. This is the only case that has ever showed any evidence of an undue irritative effect on the skin.

Case No. 25. Patient of Dr. Louis Frank. Age 64. Female. Carcinoma body uterus. With Insulin, a liberal quantity orange juice and large quantity fluid by proctoclysis and hypodermoclysis, this patient passed through a hysterectomy and is now on a diet of Carb. 63. Prot. 63, and Fat 150, without Insulin and is in excellent health. After the operation there was considerable acidosis with constant vomiting for 48 hours.

Case No. 26. Referred by Dr. S. L. Beard, of Shelbyville, Ky. Age 24. Male. Weight 160. Extremely weak. Blood sugar 0.441%. with four plus acetone bodies in urine. After four days' fasting, showed sugar. Was given low diet of Carb. 15, Prot. 5, with five units of Insulin three times a day and cleared up in 24 hours. Diet was then gradually increased to Carb. 115, Prot. 81 and Fat 150. Calories 2134, and Iletin had to be increased to 30 units a day for a time, but has now been

reduced to twenty units and dose is being gradually lessened. Present blood sugar 0.144 after food, and patient has regained normal strength and considerably in weight.

Case No. 27. Referred by Dr. L. S. Siler, of Corbin, Ky. Age 64. Female. Diabetes long standing. Troublesome chronic cystitis and decided neurasthenia. Is now taking ten units of Iletin a day with diet of Carb. 155, Prot. 51 and Fat 70 and is in excellent condition; all symptoms greatly improved.

Case No. 28. Referred by Dr. Josephine D. Hunt, of Lexington, Ky. Age 16. Female. Weight 96¼ lbs. Had had previous treatment here and developed tolerance of Carb. 100, Prot. 51 and Fat 70. Calories 1234, but was not satisfied with diet and broke over. Retnrned a few weeks later with marked glycosuria and four plus acetone bodies. Was put on half diet of Carb. 52, Prot. 32 and Fat 53, and did not become sugar free until she received Iletin 330 units a day. Then diet was increased gradually to Carb. 77, Prot. 67 and Fat 130, with calories of 1746 and Iletin reduced to 20 units a day. Patient broke over while in hospital and showed sugar, and Iletin was increased at the time to 45 units, but was soon discovered and then there was no further trouble. A report just received states that she is now doing well. There was a gain of seven pounds during the three weeks that she was here.

Case No. 29. Referred by Dr. T. E. Bland, of Shelbyville, Ky. Age 63. Male. Weight 109¾ lbs. Complicated by tuberculosis. With Iletin diabetes was controlled to the extent that patient is able to take a diet of considerably over 2,000 calories with a carb. of over 100 gms. The tuberculosis, however, is very active and is still progressing, but there has been no sugar for eight weeks.

Case No. 30. Age 49. Male. Weight 151½ lbs. Has had sugar for over two years in spite of various prescribed dietary measures. With ordinary treatment developed good tolerance with 1900 calories, but did not have sufficient endurance to carry on active business. With Iletin 22 units a day is now taking Carb. 100, Prot. 90 and Fat 170. Calories 2290 and has all necessary endurance and has gained ten pounds in weight.

Case No. 31. Referred by Dr. S. L. Beard, of Shelbyville. Age 56. Female. Weight 152½ lbs. Long standing diabetes with blood sugar 0.375%. Present diet Carb. 98, Prot. 75 and Fat 150. Calories 2042. Excellent condition with Iletin fifteen units a day.

Case No. 32. Age 82. Had broncho pneumonia, and with Iletin was kept sugar free and could be given sufficient food to maintain resisting power and recovered.

Case No. 33. Age 19. Male. Two years' duration without Iletin. Showed sugar frequently on diet of Carb. 100, Prot. 80 and Fat 130, and with fifteen units of Iletin a day is now taking Carb. 150, Prot. 80 and Fat 130 with ease. This patient is at present in Boston under the care of Dr. E. P. Joslin.

Case No. 34. Referred by Dr. Louis Frank. Age 50. Male. Diabetes of three or four years' duration. Blood sugar 0.50%, acetone bodies two plus. After gradual increase of diet with Iletin ten units a day for two weeks was able to take Carb. 56, Prot. 64 and Fat 146. When Iletin was left off in the beginning of treatment, sugar promptly appeared, disappearing with the renewed use of the extract. After two weeks he discontinued Iletin entirely and has showed no sugar for several weeks. Last blood sugar was 0.214%.

Case No. 35. Age 54. Male. Long standing diabetes with marked neuritis. Blood sugar 0.25%. With Iletin twenty units a day tolerance of Carb. 63, Prot. 80 and Fat 140 was built up. Has remained sugar free for some weeks. Blood sugar now 0.150% to 0.180%. Neuritis sugar free for some weeks. Blood sugar now 0.150% to 0.180%. Neuritis greatly improved.

Case No. 37. Referred by Dr. A. G. Ellis-ton, of New Castle, Ky. Age 70. Very weak. Blood sugar 0.326%. Non-protein-nitrogen 24.6 mg. per 100 cc. With Iletin thirty units a day is now taking Carb. 73, Prot. 70 and Fat 150. Calories 1868.

The cases just described have all been treated on the principle of very low diet until sugar free and then a steady increase. I shall now report several cases treated by another method to be described later.

Case No. 38. Age 58. Weight 206½ lbs. Blood sugar 0.27%. Diabetes fifteen years. No complications. Was first given a gradually decreasing diet with Insulin fifteen units a day until diet of Carb. 36, Prot. 27 was reached. This was maintained for three days and Iletin increased fifteen units a day to sixty units. Quantity of sugar lowered. but persistent. Patient was now given only protein 30 gm. a day and Iletin decreased to thirty units. This was continued for three days and it was deeed unwise to increase dosage of Iletin beyond this on this low diet. A diet of Carb. 87, Prot. 64 and Fat 120, Calories 1684, was decided upon to be maintained with increasing doses of Iletin until sugar free. On the second day with Iletin of 45 units the total glucose secretion was 9 gms.

Patient is getting 90 units today and became sugar free.

Case No. 39. Age 68. Male. Has had diabetes at least eight years. Has gangrene great toe. Blood sugar 330. Non-protein-nitrogen 38.9. Acetone bodies four plus. This patient absolutely refused low diet. Was given Carb. 67, Prot. 47 and Fat 85, Calories 1221. On second day Iletin fifteen units was given. Total glucose 27 gms. Third day 30 units and glucose 24 gm. Fourth day 45 units and glucose 12 gm. Fifth day sixty units and glucose 10.2 gm.

Case No. 40. Age 31. Female. Weight 110 lbs. Suppurating axillary glands both arms. Rather weak. Tuberculosis upper part right lobe. Blood sugar 0.536%. Was given diet of Carb. 56, Prot. 36 and Fat 73. Calories 1025. On the third day Iletin of fifteen units given and total glucose 19.8 gm. (Part of urine lost through error). Fourth day 30 units with total glucose 34.8 gm. Fifth day 30 units with total glucose 13 gm. Sixth day 45 units with glucose of 7.4 gm. Seventh day 45 units with total glucose 6 gm. Eighth day diet decreased to Carb. 36, Prot. 27 and Iletin to 30 units. Total glucose 2.8 gm. Ninth day, sugar free.

Case No. 41. Age 66. Male. Weight 161 lbs. Slight gangrene of toe. Acetone bodies one plus. Blood sugar 0.39 4% Non-protein nitrogen 36.5. Diet of Carb. 73, Prot. 51 and Fat. 98 given with fifteen units Iletin. First day 9 gm. total glucose but part urine lost through error. Second day 25 units and glucose of 28.8 gm. excretion. Third day thirty units and glucose of 12 gm. and fourth day 45 units and glucose of 6.4 gm. excreted. Fifth day Iletin 60 units and glucose 3 gm. and sixth day, sugar free.

Case No. 42. Referred by Dr. G. L. Dyer, of Louisville. Age 78. Female. Weight, about 100 lbs. Blood sugar 0.428%. Non-protein-nitrogen 37.8 mgs. per 100 cc. Very severe dry gangrene of foot involving toes and dorsum. Several tendons are exposed. This patient put on diet of Carb. 52. Prot. 32 and Fat 65. Calories 921 and given fifteen units Iletin. Total sugar excretion 38.3 gm. Iletin increased to 330 units and total glucose 12 gm. Then glucose decreased to about 6 gm. and then to 0.7 gm. and on next day patient became sugar free.

There are a series of other cases at various stages in the course of treatment, but they do not show anything particularly characteristic, and I shall not take time to report them in the present paper.

In most of my cases I have endeavored to build up as high a tolerance a possible without Iletin as was formerly customary in the treatment of diabetic cases. I have used either gradual diminution in diet, eliminating the fats early and reducing the carbohydrates and proteins at the same time until the patient became sugar free or until starvation became necessary. If not sugar free after three or four days of starvation, then a low diet was given, and Iletin gradually increased until the sugar disappeared from the urine. The diet was now gradually increased, carefully balancing the diet and the Iletin with the aid of the blood sugar until a proper maintenance diet was secured, endeavoring to get the carbohydrates as high as possible and to keep the fats reasonably low with a protein of about one gm. for each kg. body weight, and endeavoring to keep the Insulin within moderate limits. After the proper diet has been established, then the Insulin has been gradually reduced. The exact management of these cases depends largely on the type of case, the ordinary tolerance, the persistence of the hyperglycemia, and varies considerably with the individual patient. The advantage of this method is its safety as reactions seldom occur with small dosage and if so, they are very light; and the establishment of an accurate tolerance which is a considerable aid in the future management. The only disadvantage is that in some cases it may require a little longer time perhaps with a greater loss of weight and strength and hence a more prolonged convalescence. I have now found, however, that it is hardly ever necessary to starve the patient. If a very low diet is used, with the aid of Insulin, the sugar can usually be eliminated very easily.

Just recently I have adopted a method in the management of several cases which is greatly favored by some, but with which I am not very well pleased. It is supposed to be more rapid and it does not cause as great a loss in weight and strength, and it is not as great a hardship as a low diet. With this method a diet is given at once of a minimum number of calories for a patient at rest. A minimum protein allowance of about 0.66 gm. per kg. body weight is used as a basis, and the diet so constructed that the carbohydrates and fats are balanced so that the fats are equal to or only slightly greater than all the available carbohydrates. With this diet the patient maintains his own while at rest. The total glucose excretion is determined daily and when a standard output has been established, enough Iletin is given to metabolize this waste. Theoretically, one unit would metabolize one or two grams of carbohydrate, and if this were always the case this method would be ideal, but unfortunately it is often quite difficult to get the patient sugar free on

a large diet, and enormous doses are required. It is not safe to give these extreme doses in the beginning and considerable time is lost in increasing the amount to the point where the sugar disappears. Then with large doses the patient should be most carefully watched as he may become sugar free at any time, and the next dose may result in the lowering of the blood sugar to a dangerous level. I believe where such doses are given the patient should be very closely observed and the urine tested for sugar three hours after each injection. As soon as it becomes sugar free, the next dose should be lessened. The diet can now be steadily increased to a maintenance and the Insulin lowered as rapidly as possible. After the patient once becomes sugar free, this condition can after a short time almost always be maintained by reasonably small doses of Insulin, but in the beginning very large doses are often required to bring about this condition.

Insulin should be given one-half hour before a meal to bring about its maximum activity on the blood sugar resulting from the food consumed. In the beginning three doses a day are usually necessary, but later two doses night and morning will usually be found to be sufficient. After the two doses have proved to be enough, I then gradually decrease the evening dose, and after a condition is established in which one dose carries the patient satisfactorily, I begin a reduction of the morning quantity.

In diabetic coma the management is different, as these cases are always desperate and unless radical means are used, death is almost certain to follow. All the ordinary methods of managing severe acidosis should be used. The patient should be kept quiet, the stomach and bowels emptied if possible with gastric lavage and enema, large quantities of fluid should be administered by mouth of possible and if not by proctoclysis. It is a disputed point whether soda should be used or not. It probably does no harm and it favors the elimination of acetone bodies so its use is permissable at least. Now the most important measure is to administer 50 gm. Glucose intravenously in 500 cc. normal saline. At the same time 50 units of Iletin should be injected into the vein. In two hours this should be repeated and again until improvement takes place and then less often and in smaller quantity. During this treatment great care must be used to keep the glucose in excess of the Iletin and the urine should be examined after each injection, even if catheterization is necessary. Unless sugar is being excreted, there is great danger of throwing a diabetic coma case into an Insulin coma. After the coma has been cleared up the case can then be managed as any other diabetic.

In the preparation of patients for surgical operations they should have at least 50 gms. of carbohydrates a day and preferably considerably more and a comparatively low fat. Then the case should be carefully watched after operation and glucose given quickly with the proper doses of Insulin if there should be any evidence of acidosis.

Insulin is of even greater value in young than in older patients and it may be regarded as a specific in diabetic coma. It is of extreme value in patients requiring surgery and in diabetes complicated by septic conditions, although it must be recognized that in all septic cases the control of the diabetes will often not control the sepsis after it is once established. These cases should always be treated early and not left until the state of their vitality is so low that nothing can save them. This is especially true in gangrene. If this is seen early the prognosis with Insulin is favorable, but when the case has progressed too far, the results are very uncertain.

In the Insulin treatment of diabetes a wonderful advance has been made in the management of these patients, but Insulin can not be expected to cure every case any more than Salvarsan and Mercury can be expected to cure every case of syphilis or an appendectomy every case of appendicitis. Under all reasonable conditions it will greatly aid in the control of the blood sugar and permit the establishment of a good health and comfort, and many cases that would absolutely hopeless without its aid may be restored to usefulness. However, there are always a certain number of poor sufferers who have completely lost their pancreatic function and are in such a state of exhaustion with often serious complications in other organs that they have passed beyond the border where any human aid can save them.

I have endeavored to express as clearly as possible my views on the management of diabetic cases, but I believe no absolute rules can be given, as every case will always be a law unto itself. Its proper management will depend upon the experience, skill and good judgment of the physician, and there is no condition where improper management may do greater harm and lead more quickly to disastrous results than in the use of this powerful remedy. This is especially true in coma, as a case may change so quickly from a diabetic coma to an Insulin coma and die on the very verge of recovery.

Conclusions:

1. Insulin is a very potent remedy in diabetes. It will almost without exception lower the blood sugar.

2. It can easily lower the blood sugar to the point of coma and even death if not properly managed.

3. No absolute rules can be laid down, as its action depends upon the severity of the case, and upon individual characteristics, and it must be used with great caution and its action carefully controlled.

4. In diabetic coma when large doses are given glucose must be used in sufficient quantity to keep the patient constantly excreting sugar. If he stops excreting sugar, he may very rapidly pass into Insulin coma and die.

5. It can not be emphasized too strongly that Insulin should never be used by any one who does not have available all necessary laboratory facilities and who does not understand thoroughly scientific diabetics and the modern management of diabetes. To give Insulin without absolute control of the diet will not only accomplih any good, but it invites the most disastrous consequences.

6. Insulin can not be expected to relieve every case, but with proper usage, it will unquestionably save the lives and restore to usefulness the vast majority of victims who would unquestionably progress to a fatal termination without it.

ABORTION, CRIMINAL AND INEVITABLE.*

By N. W. Moore, Cynthiana

As I look back over my experience in the Medical Profession, a career extending over forty years, I recall nothing which in times past that has caused me more anxiety and doubt, more heart-rending scenes, more tragic deaths than that of criminal abortion. The real criminals in many of these cases were not confined entirely to the laity or to ignorant or so called midwives, but I am sorry to say included in this list were regular licensed physicians, who for the love of mammon, or for the sake of being popular with, or to hold their clientle, violated the laws of man and God. There was a time when if pregnancy was intercepted within a certain number of days or weeks after conception it was not considered a criminal offense; but the laws of our country recognize the right of each individual to life, liberty and happiness; therefore, I firmly believe that as soon as an individual, personal being comes into existence, at the moment of conception, so does that individual at that moment become a member and ward of the entire community. Think for a moment, the great loss the world would have sustained had the lives of some of our greatest men and women been checked in utero. We should look upon the unfortunate woman who heroically faces the world and brings into her companionship the child of her misfortune, almost a Saint beside the misguided and cowardly married-woman, who through selfishness or fear of losing some of her personal charm, destroys her own unborn child. She not only disturbs her own domestic happiness and deprives the Community of a prospective useful citizen, but the saddest of all, she robs herself perhaps of one that she needs most in the shadowed days of advanced life. Furthermore, "The haunting dreams of what might have been."

The history of criminal abortion dates back to the most primitive time and includes all races; and, strange to relate, as civilization increases, the more does this crime develop, and today, notwithstanding our most drastic laws, the criminal is rarely convicted. If a guilty physician is placed on trial there is very often some sympathetic doctor-friends in his community ready to throw the mantle of charity around him, and add to this a jury composed partly of women who are usually in sympathy with this class of criminals, you can easily determine what the verdict will be—an acquittal. Condemned from the Bench and the Pulpit, the crime still progresses. There is the poor girl who has yielded her honor for the sake of food or housing for herself or those dependent upon her; there is the lady of fashion, with less excuse, who cannot give up the time she owes to society to the cares of maternity. Many an unborn child is executed upon the plea of limited resources, that the family cannot continue to live up to their accustomed luxury, if an additional member should appear; then the most pitiful of all, the girl who has been betrayed by her lover under promise of marriage. In some overcrowded countries abortion is looked upon as a necessity, just as it is here considered a necessity in a family too numerous. In China and Japan it is common; in Arabia and New Calladonia it is justified on account of the scarcity of nourishment and the difficulty of rearing children.

Among some crude people it is not the wish of the individual but the law of the land, which determines the course of gestation. Upon the Island of Formosa a woman is not allowed to bear a child before her thirty sixth year, and priestesses bring on a miscarriage by kicking the belly of the pregnant woman, before the proper age in order to keep down the population; under a similar law in the Sandwich and South Sea Islands the population was reduced from two hundred thousand to seven or eight thousand in the course of thirty years. Speaking of our own country, we must admit that our laws against criminal abortion have done a vast amount of good, but it is the physician alone that

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can do the most good, it is to him they come most often, it is he, the trusted, family friend, who will do more than judge or priest to change this unfortunate condition of affairs. Through ignorance few women know the awful responsibility of this crime. We must enlighten them; do all in our power to convince them that they cannot hide behind the silly notion that killing of the foetus in the womb is a bit different from the killing of the child in the cradle. To back up this statement, it is only necessary to quote from any work on medical jurisprudence. If religiously inclined, and they do not believe in the justification of human laws, point out the Divine Law, which says, "They who do such things cannot inherit Eternal Life." Inform them that they may lose their own lives through an abortion, and if they should live after undergoing this ordeal, they run the risk of living the remainder of their lives in a state of chronic invalidism.

We now have many legitimate maternity hospitals, and when an unmarried woman becomes pregnant and consults me as to how to dispose of her case, I refer her to one of these institutions, and in many cases I have saved the mother from abortion or perhaps a suicidal death. If she so decides her child can be placed in a foundling asylum, and later on returned to her where it may obtain one of the most precious of all gifts—a mother's love and protection. We should inaugurate and establish a great national campaign of education to awaken the people of our land to their duty in checking this hideous crime—criminal abortion. To enumerate the various methods now in use to produce abortion would extend this paper far beyond your time and patience, so I will only mention one or two of the latest methods now being used by professional abortionists, which is the application of radium and the x-ray.

Assuming that you are all familiar with the pathology and symptomatology of abortion, I will only take the time on this phase of the subject to mention a symptom that is often overlooked—persistent vomiting; and especially so when occurring in unmarried women, of unquestioned respectability, however this is no barrier to the entrance of the spermatazoon. In this connection I will report a case that fell into my hands a few years ago. The woman, an unmarried school teacher, who had been treated for several months by two physiicans for pernicious anaemia. When I took charge of her case she was bed-ridden, emaciated, very anemic and suffered with the most persistent attacks of vomiting I have ever seen. Her pulse was very rapid and her temperature 102. She confessed to me, although she did not relate to her other physicians that she had daily hemorrhages since her first illness. Being pressed by her mother for a positive diagnosis, I informed her that I would give up the case unless I was permitted to make a vaginal examination in order, if possible, to discover the source of the hemorrhage. To this the patient finally consented. Dilating the cervix, a decomposed placenta was removed. Almost immediately the nausea and vomiting ceased, the temperature went down, appetite improved and within a few weeks the anemia disappeared and the patient was stored to normal health.

In some cases presenting symptoms of abortion the question may arise, is the patient really pregnant? Remember that the diagnosis of pregnancy, in the early stages is sometimes the most diffieult thing we have to deal with, in fact it is impossible. Some of our most eminent men have made some very grave mistakes, going so far as to place the patient on the operating table, under the belief that they were dealing with a uterine or cystic tumor or other pelvic growths.

A woman has an abortion, we will say, at the end of the third month, the foetus and the placenta come away and the decidua vera is carried off in the lochial discharge that follows; the uterus has apparently cleansed itself thoroughly. When her next period arrives she does not menstruate, and this is the case on up until the sixth month, after her abortion, when she is delivered of a fully developed child. The medical attendant, in a case like this, is placed in a very embarrasing position, especially when the patient tells him she never had an abortion at all. The explanation is this; one of a pair of twins has been cast off and the other had gone to full term. Dr. Thomas, of New York, encountered three cases of this kind.

Another complication may occur in an abortion; the foetus is cast off with all its membranes entire, the patient is assured that she will soon recover, and is dismissed; in a month or two the physician is sent for in great haste, and he arrives to find her in a dying condition. An examination shows that in addition to the foetus in utero there has been an extrauterine pregnancy and the fatal result was due to rupture of the fallopian tube. Therefore when in doubt be very careful how you make your diagnosis, as well as prognosis, because you may not only lose your reputation as a competent physician, in the eyes of the family, but you may be involved in a law-suit for damages, especially where an unmarried woman is not pregnant and your diagnosis was to the contrary. Reputable physicians may be made the subject of blackmail, and falsely accused of committing abortion; therefore, it should be a rule of a physician to make no examination of the pel-

vic and abdominal organs of unknown women without the presence of a third person.

In the treatment of abortion, we will first consider that of threatened abortion. The two main principles of the treatment to prevent a threatened abortion should be perfect rest and the administration of drugs that diminish nervous sensibility and weaken muscular action. The first can only be secured in bed, in a supine position, the room should be darkened and kept quiet, that the rest may be mental as well as physical, the second object of the treatment is usually accomplished by giving opium, bromide of potassium or chloral; the diet should consist of only the simplest food, such as milk or beef juice, so that the stomach may have little to do. It is hardly necessary to state that the bedding and external genitalia of the patient should be made as aseptic as possible; and the physician, in his examination should always use sterile gloves; this precaution is necessary for fear that the case may go on to inevitable abortion, and the patient become infected.

In considering the treatment of inevitable abortion, the following questions arise; What is inevitable abortion?, and how do we know that abortion is going to be inevitable? We may have the decidua, in part, discharged and considerable hemorrhage, and yet pregrancy go on to term. Only under two circumstances is abortion inevitable; one is after the ovum, or foetus is dead and the other is when the membranes have been ruptured. To answer the question "when is abortion inevitable?" it requires the utmost judgment.

Upon deciding that abortion is inevitable, the following treatment should be instituted; if the os is closed and there is hemorrhage and pain, properly applied vaginal tampons, held in place by a T bandage, and permitted to remain in place from eighteen to twenty four hours, will serve to arrest hemorrhage, soften the cervix and bring on uterine contractions. When you are ready to remove the tampon, you will probably find upon its removal, and following it, the entire foetal shell, unbroken if the period is early in utero gestation, or the foetus with the membranes and placenta, if later. If not successful at the first tamponing, repack and wait several hours longer; however, if this should fail, and there is no great amount of hemorrhage, the os still undilated and the patient still having uterine pains (which should never be checked by opium) your main duty consists in not interfering. Nature is perfectly competent to carry on her work to completion without your aid. Forcible dilatation of the cervix with steel dilators should be avoided, if possible. They are dangerous even in the hands of an expert, for in many cases the uterus has been ruptured with fatal results; furthermore, they produce tears or rents in the cervix which open up new avenues of infection. If the os is sufficiently dilated the finger can be used to loosen and remove the ovum, and if the placenta is not too adherent it can also be removed by the same method. If the placenta and membranes are very firmly attached, and dip down deeply into the uterine tissue, so they can not be removed by the force of the finger, DeLee says, "all that is needed in such a case, is to go over the uterus lightly with a half-sharp curet, to make certain that pieces are not retained, especially in the tubal corners." Some authors advise against this curetage, but DeLee states that he does so in all cases, believing that the patients make quicker and more complete recoveries when the uterus is left absolutely smooth and clean. He admits that the curet, in the hands of an unskilled practitioner may do great harm; very true, but is it not a fact that some of our most skillful men have perforated the uterus time and again, not only with a sharp curet, but with a dull one as well? Personally, I do not want to use a sharp instrument of this kind, where my eye cannot follow it, and where I do not know whether I am scraping away uterine tissue or mucous membrane. The same argument, I believe, is justifiable against the indiscriminate or haphazard use of the ovum or placental forceps, groping in the dark, biting here and there, sometimes going so deep as to perforate the uterine wall, and on withdrawing the forceps to be surprised to find within its grasp the omentum or a loop of intestine. This accident may be avoided by first separating the ovum by the finger, inserting the forceps under the guidance of the finger, and then rotating the blades of the forceps during the act of closing them. At this point I wish to enter protest against the indiscriminate use of such drugs as ergot and pituitrin to facilitate the expulsion of the products of conception, for they only prolong the time of passage of the ovum or its membranes.

As what we have had to say concerning the treatment of abortion up to this time, concerned chiefly those cases that were supposed to be non-infected; so, for a brief period, we will consider septic cases, or what we may term Septic Abortion. A vast majority of these infected cases are due to criminal interference by midwives or ignorant abortionists, or the patient herself sometimes, passing unclean, foreign bodies into the cervix or uterus. Only a few years ago, I removed a large orange—stick which had been in the uterine cavity for more than three months. As usual the patient denied at first any knowledge of its being there. Formerly the accepted treatment of septic abortion was the immediate emptying of the uterus by forcible

means, if neecssary, and this practiec is still adhered to by quite a nmnber, both here and abroad. Needless to say, this method undoubtedly carries certain risks with it, whieh in my humble opinion, should be avoided. The trauma of curetage, digital as well as instrumental, may prove fatal, beeause a superficial and not dangerous infection may be converted into one that is most dangerous. My own experience, as well as that of others, has taught me that in aeute eases it is best to leave a uterus full of infected ovular remnants to the powers of Nature, than to resort to the curet. Later on, when Nature has prepared a sufficient wall of protection in the uterine cavity against the invading infeetion, and the uterus is unable to expel the ovum or placenta, then the physician, with the utmost care, is justifiable in using instrumental means to rid this organ of its dangerous hosts.

DISCUSSION

C. Z. Aud, Cecilian: I will begin at the end of the remarks of the essayist. He (Dr. Redmon) says no operation should be begun without careful consideration and thorough consultation. I thoroughly agree with him in that. I am out of practice practically now, but I have been engaged in country practice for fifty odd years. I have delivered something like four thousand children, and have had but one death from pernicious vomiting. I have seen quite a number of women operated on in the country, both child and mother being lost. I have seen a number of very grave cases relieved with simple remedies. I have seen wine of ipecac used for pernicious vomiting. I saw a woman, a very grave case, to whom a doctor had administered all internal remedies I knew anything about. I suggested to him that we make a careful examination of the woman in every respect. We did so, and we found a lochial discharge which led us to believe there might be some irritation about the mouth of the uterus. We found an ulcerated cervix. I advised the use of nitrate of silver and to give it a good coating. He did so, and the woman is living today. The doctor told me today that he did not leave the house until the woman was relieved of the sick stomach, and she did not vomit any more. I want to urge on you that you can in some of these cases by giving medicines internally afford relief. If possible, carry the woman along until the child is viable, and then perform Cesarean section which has gotten to be quite a popular operation in the hands of the competent hill-billy doctors as well as the accomplished city physician.

I see the face of a man here today who came down on the train with me the other day, who recited an instance in which he had seen wonderful recoveries by being patient.

I want to say this about the Catholic doctrine; where a body has been teaching theology for two thousand years, and their theologians are perhaps as wise as any of the theologians on the face of the earth, it is well enough for us to at least understand about their doctrines and their reasons for their doctrine. I would advise you to at least inform yourselves about why the Catholic Church has taken such important steps, it requires backbone to take such steps in this world and in this day of agnosticism.

C. W. Shaw, Alexandria: The subject of abortion is certainly of vast importance to the general practitioner. I am glad that the professional abortionist among the medical profession is very rare, but I am afraid that some reputable physicians are in the habit of sending cases to some of these professional abortionists, which is to be regretted. If we can get our women to believe that they should bring into the world better children and relieve them of some of the horrors of the propaganda which is going around, it would be a great thing. Of course, women in labor must suffer more or less pain, but the average woman throughout the country, when told about the horrors of child birth, gets wrought up to a certain stage that they get scared and are apt to seek the services of the professional abortionist. I believe if we can get our women to take as much interest in producing better babies as they do in getting a well bred pet dog, or something else, we will have created an instinct or a desire on their part to produce and bring into the world better babies.

Oscar O. Miller, Louisville: I enjoyed listening to these two papers. Dr. Redmon mentioned as one of the therapeutic indications for abortion pulmonary tuberculosis in certain cases. It has come down to us through literature that a tuberculous woman will bear the first child very well; the second child not so well, and the third one never. This is by no means axiomatic. We see many cases of advanced pulmonary tuberculosis where the women under proper environmental conditions, such as in a sanitorium, go along and do remarkably well. I am speaking now of far advanced cases of pulmonary tuberculosis.

Many years ago it was a common observation among physicians that cases of pulmonary tuberculosis, when they became pregnant, did remarkably well. The whole human economy was concentrated on the new life. The woman seemed to gain weight, become afebrile, and to do remarkably well. Some of these cases maintained that improvement in their condition, and went on to arrested cases of the disease.

I think it is a serious question for the internist to decide whether a woman with pulmonary tuberculosis shall go on to delivery or not. It is a question we should decide very carefully. If you can place that woman in a sanitorium and put her at proper rest, many of these cases will do remarkably well and their lives will be prolonged. If the case is so advanced that therapeu-

tic abortion is considered, it will do no good. The case will light up with frightful activity after the abortion is performed. When advanced cases of pulmonary tuberculosis go to full term and delivery, the pulmonary condition lights up, and they die in a short time. I would, therefore, warn against a hasty consideration of therapeutic abortion in advanced cases of pulmonary tuberculosis.

J. G. Carpenter, Stanford: I endorse what has been said by the essayists, but there is one condition in which premature labor has to be induced to save the eye sight, particularly where you have a retinitis albuminuria. You have such destruction of the optic nerve that the induction of premature labor is a justifiable procedure. But the unfortunate thing is that in so many of these cases we hill-billy surgeons are not prepared to test vision, to ophthalmoscope the patient and determine what the condition of the eye sight really is. I recall one patient in whom I was going to bring on premature labor on account of her eye sight, and at night she went into convulsions and nature did what we were going to do and saved the woman's eye sight. That is about all I have to say.

W. W. Anderson, Newport: I was much pleased and edified by hearing these two fine papers bringing up a subject of vast importance. I differ with the first essayist in this one thing, if I understood him correctly, that rupture of the membranes makes abortion inevitable. I have seen a number of cases in which rupture of the membranes did not interfere, and pregnancy went on to term, the membranes being restored to normal.

The discussion of Dr. Aud suggested the use of medical measures being given a thorough trial. They are very good, but let me re-enforce the thought of the second essayist in which he said do not keep it up too long; do not let the woman get into a condition of exhaustion where she is not fit for operative relief.

Our old professor described various physical properties and physical action and therapeutic uses of certain drugs, and smilingly gave us a list for therapeutic use in the vomiting of pregnancy, and every drug was useful for the vomiting of pregnancy according to him, and almost every one of some repute as being useful because of its psychic effect. Let us not try to use all the drugs in the pharmacopea before we proceed to relieve the patient. We are in the peculiar position as a scientific body in discussing questions the crux of which is basically small. We have failed in our Christian civilization to accept at its value the great place which the sex function holds in the individual and social life. We have as a Christian community tabooed the whole sex question to such an extent that it is considered perfectly good form for a woman to deny the existence of such a thing as sex feeling at all until sometimes she may deny she can possibly be pregnant, or she may assert that she never had such a feeling in her life. We have gone to such an extent in our tabooing the sex question and putting shame upon ourselves for its existence, that we have made women ashamed to be pregnant.

Jewish women, especially of the lower classes, are proud of the fact that they have the prospect of motherhood. The Jewish woman tells her friends and is congratulated by them. Christian women keep themselves out of sight, they cloak themselves to disguise their condition, and avoid publicity as long as they can. The Mormons are far ahead of us in that regard, for they teach the young woman that the unseen world about her is peopled with spirits who pledge their life through her, and it is her high and holy function to give them life and care for that life to honorable manhood and womanhood.

Let us get at the bottom of the thing and acknowledge the fact of sex; that it has a high and holy and worthy place in life, so that motherhood and fatherhood shall be the most honorable thing in life.

G. G. Thornton, Lebanon: In my estimation these two excellent papers cover a subject that is of as much importance to the profession of medicine in Kentucky and the United States for that matter, as any other subjects that have been discussed before this body on this occasion. It seems to me, it is a pity that the attitude that these two gentlemen has presented could not be fully appreciated not only by the profession but also by the women of our country.

I have been practicing medicine for thirty-five years, and only once did I think it was necessary to produce a miscarriage, and that was on account of pernicious vomiting. After consultation it was agreed that we should produce miscarriage, and we saved the woman's life only to lose her two years later with typhoid fever. It is a question whether we did very much that was worth while in that case. It is really remarkable to see how many people there are who are anxious to bring about a termination of the existence of the fetus. I remember one man, a very intelligent gentleman, a member of the church, who came to me with the desire and even demand that I do something to bring about the wife's menses. I said, what is the trouble? He said, "We have all the children at our house that we can take care of." "Very well," I said, "go home and knock some of them in the head and give this poor defenseless fetus a chance to live." "But," I said, "you can just as well do that as to take the life of the unborn fetus." He said, "the Bible says, in the beginning God created man and breathed into his nostrils the breath of life and he became a living soul, and it would not be murder till it had breathed the breath of

life." Then I said, "According to your argument there is still no murder in taking the lives of the children in your home, because when God created man, he created him a full grown man, as I understand it and none of the children in your homes are as yet full grown, and therefore it would not be murder to take their lives." That fetus was born in due time, and today I presume is a is a happy, healthy young lady of twenty-five years of age.

These things often confront the young doctor in particular. He is persuaded to do these things by people in good standing; it matters not what creed or what church to which these people belong, they desire these things done. I believe the teachings of the Catholic Church have more to do with the prevention of miscarriages than the teachings of any other church with which I am acquainted in my part of the state where I live. They teach that under no circumstances shall a miscarriage be produced, and I do not know but what that is very good teaching.

N. W. Moore, Cynthiana (closing): First, I wish to thank the gentlemen for their free discussion of my paper. There is one thing I would like to mention. Dr. Anderson said that where rupture of the membranes has occurred he has seen pregnancy go on to term. I do not recall any case I ever had where pregnancy has gone on to term after rupture of the membranes, and this has not occurred in the practice of some of our greatest obstetricians. I am glad to know, however, that Dr. Anderson has had such an experience.

SOME MANIFESTATIONS OF PROTEIN HYPERSENSITIVENESS.*

By John Walker Moore, Louisville

Idiosyncrasy was the term used in days gone by to express personal peculiarities toward certain foods, plants, animals, fowls or drugs.

These peculiarities in many instances were looked upon by physicians as medical curiosities, in that there was no scientific basis recognized for their occurrence. Since the physician was unable to account for these manifestations, the laity were eager to characterize them as traits of queer individuals with weak will-power and little regard for the convenience of others. Every community has its representative. We hear that Mrs. Blank's pet aversion was cats; she was able to detect the presence of a cat without seeing it. On entering a neighbor's home, she would insist before sitting down that the pesky little animal be found and removed. She was always sure of its presence, and she was never found to be wrong. The neighbor never felt that Mrs. Blank was hypersensitive to cat emanation, but thought it was just one of her many narrow traits.

The horse has always claimed his hypersensitive individuals, mainly for the reason that manifestations occurred not only behind the plow, but also just as relentlessly in the buggy. The cow never enjoyed this recognition. And so it went, the physician agreeing. Today it is believed that these idiosyncrasies have a real basis,—indeed, in many instances it can be proven without doubt that there is some substance to which the individual has become hypersensitive.

The method of testing individuals for hypersensitiveness may be carried out in one of two ways,—or a combination of the two; namely, by the cutaneous scarification and the intradermal injection methods. In both instances the results depend upon skin reaction. The skin scarification method is the only practical means of testing one person against many proteins, and the technic we try to achieve is this: six to eight small cuts are made on the cleansed flexor surface of forearm, with a Gillette safety razor blade, of such a depth that only the smallest drop of blood appears. A drop of N 10 sodium hydroxide solution from a pipette is deposited upon each cut. A wooden tooth pick is dipped in the dried protein and rubbed into the cut, a separate pick being used for each protein.

A positive reaction appears in from five to thirty minutes as a clear-cut wheal surrounded by an areola of hyperemia. Reactions with negative controls which measure 5 mm. or more, are regarded as positive, and the intensity of the reactions is expressed by the symbols plus one to a plus four. If the other tests are negative, and a reaction occurs under 5 mm., we designate this as a plus minus reaction and regard it of value for therapeutic purposes.

The intradermal injection method, championed by Duke and others, is carried out by dissolving in a sterile dish 1 mg. of dried protein in 0.2 c.c. normal sodium chloride solution and injected intra-dermally, using as a control the intradermal injection of 0.2 c.c. normal salt solution. Duke claims that this method is more reliable and vastly more sensitive than the scarification method. The wheals and erythema appear within three to fifteen minutes. However, a delayed reaction may appear as late as twelve hours or more, which is of as much diagnostic importance as the earlier one. Fontain simplifies the time consuming procedure of weighing each time a milligram of protein, by having his drug-

*Read before the Louisville Medico-Chirgurical Society April 28th, 1922, and before the Jfferson County Medical Society, June 5th, 1922.

gist to prepare hypodermic tablets containing one mg. of the desired protein.

Hypersensitiveness or idiosyncrasies toward proteins may be manifested as numerous clinical entities: to wit, hay fever, asthma, eczema, angio-neurotic edema, urticaria, enteritis, purpura, etc.

Cooke[1] advanced the idea that the clinical reaction of a naturally sensitized individual depends entirely upon the group of cells that happen to be sensitized. Thus, according to this view, when the sensitized cells are those of the mucous membrane of eye and upper respiratory tract, the reaction that occurs is typical of hay fever. When the sensitized cells are those of mucous membrane or smooth muscle fibre of the bronchi, the reaction gives rise to that group of clinical manifestations designated as asthma; for the same reason when the sensitized cells of the skin are subjected to the specific antigen, we have eczema. If the sensitized cells are those of subcutaneous tissue angio-neurotic edema or urticaria results. When the sensitized cells are in the mucous membrane and smooth muscle fibre of the intestine, the reaction gives rise to acute, subacute and chronic symptoms of gastro-enteritis.

Hay Fever. The simplest and most exacting form of protein hypersensitiveness is encountered in hay fever. The pollen is by far the commonest etiological type of protein, and produces the socalled true or seasonal hay fever. Of the seasonal type of hay fever we have found in this vicinity the spring variety to be due principally to June grass, red top, orchard grass, clover and timothy; the midsummer variety to corn; and the autumn variety of hay fever to ragweed, sunflower and golden rod. There is another type of hay fever, by no means rare, that is non-seasonal. The attacks occur througout the year, and as often as the sensitized individual comes in contact with the offending substance. Animal emanation is a common etiological agent of this type of reaction, especially horse-dandruff. The continuous "rose cold" complained of by women, in some instances has been shown to be caused by the inhalation of powder which they have used, and that has usually contained orris, rice or corn starch, to either one of which hypersensitiveness may be shown.

M. R., aged 35, a chef for 15 years, noticed for the past year and a half that he had attacks of sneezing, lacrymation and coryza on lifting the top from the flour barrel. The attacks have become progressively worse and patient complains of violent attacks at present, when they were mild in the beginning.

P. C., aged 39, a baker for 28 years. Noticed at age of 17 for first time that while mixing the flour "his eyes would run," followed by paroxysms of sneezing. The attacks grew gradually worse until one year ago, and in addition to sneezing and lacrymation, typical asthmatic spells occurred. The attacks are more frequent during the colder months, when the doors and windows of the kitchen have to be kept closed. He states that the attacks occur in summer only when the kitchen is tightly closed and only when handling flour. Cooked free flour as occurs on top of baked pies does not produce any hypersensitiveness.

In both cases cited above the skin reacted strongly positive to wheat protein. The patients were advised to change their occupations, or if they continued, they should take every precaution to avoid contact with floating particles of flour. Both selected the latter course, and by exercising great care they have suffered only occasional light attacks.

Asthma. Studies made on large groups of patients suffering from asthma show about 50% to be hypersensitive to some form of protein. Longcope[2], in studying 127 cases of asthma, found 59% to give positive skin reaction to one or the other or a combination of extracts of proteins. Of 59 patients giving protein reactions, 25% gave reaction to pollen extract, 14 to epidermal extracts, 20 to food extracts and 28 to bacterial extracts.

Walker[3] states that one should expect milk if asthma occurs in first year of infancy; eggs, cereals and wheat in second year. Between the ages of 2 and 12 years, the frequency of food as the cause of asthma decreases; animal emanation and plant pollens are frequent. Between the 12th and 40th year, foods are rarely, and bacteria usually, the cause of asthma. Plants and animals are frequent causes of asthma during this period. The onset of asthma after the 40th year is practically always caused by bacteria. Walker's conclusions are based upon a wealth of statistics, and are just what one would expect; however, one must not be too sure of statistical conclusions, for they allow many loop holes for error. To illustrate, Doctor Bruce* has reported elsewhere, a very remarkable case of asthma in a baby three months of age. The onset was sudden, beginning as a cough the evening before and developing typical asthmatic symptoms on the following day. For three days the treatment was palliative, consisting of steam inhalation of tincture of benzoin compound, benzyl bensoate, sodium bromide with tincture of belladonna by mouth; and hypodermic injections of adrenalin. None of the drugs produced any noticeable relief, save for the first dose of adrenalin, which had a slight

*I am indebted to Doctor Bruce for the privilege of using the detailed history of the case, and I regret that space does not permit quoting it in full.

temporary effect; however, subsequent doses of the drug produced little or no relief. Nasal feeding had to be resorted to, owing to the fact that not more than two ounces of milk could be given by mouth before a violent paroxysm of coughing occurred. On the fourth day of the disease, I was called to make some protein sensitization tests. The skin tests showed the baby to be positive to lactalbumin, whole cow's milk and chicken feathers, and negative to goose feathers, sheep's wool and the various bacterial proteins. I will quote in detail the after treatment narrated by Doctor Bruce, as it is really remarkable. The baby had been sleeping on a chicken feather pillow. The pillow was removed, and within an hour the dyspnea and wheezing were markedly diminished. On the following day, the wheezing respiration was barely noticed, and the attacks of coughing were much less frequent. Within a week, the rales had disappeared from the chest. One week after the chicken feather pillow had been removed from the baby's bed, the baby's mother, who had put on her hat to go out, leaned over to see the baby. Almost instantly he began to wheeze and choke. The mother, aware of the sensitiveness of the baby to chicken feathers, immediately took off her hat to see what kind of feathers it was trimmed with. They were found to be chicken feathers. On the following evening, the mother wearing the same hat, leaned over the baby, without thinking, and immediately the baby began to wheeze. Although the baby was almost relieved of his asthma by the removal of chicken feathers from its environment, it remained susceptible to changes in weather. At this time, the baby was getting 4% protein in the form of Dryco milk. This feeding contained a high percentage of lactalbumin, a substance to which the patient was sensitive. Doctor Bruce, thinking that this feeding was responsible for the continuation of the asthmatic symptoms, changed the feeding to half and half milk and water mixture. This contained 1.8% protein. The asthmatic symptoms disappeared completely as soon as this change was made.

Doctor R., of West Virginia, aged 59, had had asthmatic attacks throughout the year for the past ten years. A little over a year ago, he was visiting in the country. He thought he would "build himself up" by drinking an extra amount of fresh milk. Within a few days his asthmatic attacks became violent. Thinking that milk might be producing the asthma, he refrained entirely from drinking milk; immediately the attacks ceased. Owing to a total abstinence from milk in any form, he has been entirely free from asthma since. In order to test the validity of the protein reaction, we tested ten or twelve different proteins, including the protein of milk. To our amazement all the proteins reacted negatively to the scarification method. Knowing the limitations of the scarification method, particularly in reference to food proteins and age of patient, we resorted to a more delicate, but more laborious procedure, namely, the intradermal method. With this method we obtained a strongly positive reaction to milk.

Miss M. B., aged 21, stenographer. Had none of childhood diseases. Influenza in 1917. At the age of 9 years began to have attacks of wheezing and difficulty in breathing at night time. Until two years ago the attacks occurred at least once a week and seldom lasted throughout the night. Since that time the spells are less frequent, occurring from one to three times a month. They are, however, more severe and last from two to three days. She eats all vegetables, especially potatoes and beans. Potatoes are her chief article of diet, and form the greater part of each meal. The chest findings were those of a typical asthmatic. Some fourteen tests of food proteins were made. Potato was strongly positive, and shad slightly so. She was directed to refrain from eating potatoes and fish. This she has done, and has been free from the asthmatic attacks since, which has been eight months.

Eczema. This form of skin lesion is not infrequently a manifestation of protein hypersensitiveness. Particularly is this true with the eczema in children. Of the 41 cases of eczema in breast fed infants tested by O'Keefe, 61% showed a positive reaction to some one of the proteins used. Apparent cure was obtained in about 40%, and definite improvement in about 20% followed the omission or limitation in the material diet of one or more food proteins to which the infant was sensitive.

B. W., male, white, aged 6 months, breast fed, weight 16 pounds, showed extensive eczema about face and scalp. Mother states that the eczema appeared on baby's face at age of seven days, and has been constantly present, varying in severity and distribution of the lesions. For the past month the severity of the eczema rapidly progressed even though every palliative measure was pursued. Two weeks ago, baby was taken off the breast and put on cow's milk. Immediately the skin lesions began to subside. The following proteins were tested by the scarification method—egg white, cow's milk, lactalbumin, and human milk. Egg white and human milk gave positive reactions. The child was tried again on mother's milk, and within a short time began to show new lesions over face. The baby was again put on cow's milk and

when last seen showed only one small patch about the size of a dime over right brow.

We have had quite a number of cases of eczema recently in bottle fed babies, showing reaction mainly to casein in cow's milk, lactalbumin, wheat, oat and egg white. The time has been too short to show a complete cure of the condition from withdrawal of food to which they are hypersensitive.

Urticaria. It has been repeatedly shown that in hypersensitive individuals suffering with asthma or hay fever, a subcutaneous injection of the protein to which they are sensitive has been followed by a generalized urticarial eruption. There is considerable evidence to show that on contact with or ingestion of native proteins by individuals who are hypersensitive to that specific protein, may bring about the same symptoms. The strawberry rashes, and attacks of hives, after eating certain shell fish are very familiar. Somewhat less common are the recognized cases that follow the eating of meats, vegetables and other articles of food.

G. N., aged 55, a business man, was subject to seasonal attacks of hay fever until three years ago, at which time he was tested at Johns Hopkins and found to be sensitive to June grass and rag weed pollens. A diluted pollen solution was made, and has been given to patient yearly without the return of hay fever symptoms. One year ago while visiting in England, he developed an urticarial rash over face, flexor surfaces of arm and legs. He has had repeated attacks since, and causes no little annoyance by the association of itching. He has tested in all with sixteen proteins, giving a strong reaction to potato, and plus or minus reaction to shad and tomato. He was told to refrain from these foods, and he has, without the return of urticaria for the past six months. It would not be amiss in saying just here, that very rarely can one detect any definite reaction by the scarification method in patient suffering with urticaria. Even when hypersensitiveness is present, it is rarely demonstrable unless the protein is introduced intradermally. Even under this conditions the reaction is often delayed in its appearance.

Angio-neurotic edema. That certain types of angio-neurotic edema are merely expressions of hypersensitiveness and not a disease *per se* now seems to be fairly well established in this country. Curious enough, a great majority of cases reported that are due to allergy, has been caused by indigestion of food to which the individual is sensitive. Walker has reported cases in which this syndrome has been provoked in three patients by the hypodermic injection of the proteins of flax seed, timothy pollen and ragweed pollen, respectively, in persons each of whom had previously reacted to skin tests with the same substance.

Mrs. P., aged 23, was seen two years ago with typical lesion of angio-neurotic edema of the face. The diagnosis was unmistakable. At times she would suffer from hives, and during this period a scratch mark on the skin would be followed by a linear elevation. She had repeated attacks of hives and angio-neurotic edema until one year ago. At this time skin tests were positive to cheese and celery, and since eliminating these articles from her diet, she has been entirely free of these symptoms.

Gastro-intestinal upsets associated with vomiting, diarrhea, gripping pains in the abdomen and mucous colitis, may be the result of protein hypersensitiveness. Duke[5] reported last year six very interesting cases of this type, all of which gave history of long standing dyspepsia and occasional attacks of severe abdominal pain. Several of the patients had severe abdominal pain after subcutaneous injections of an extract of the food to which they were sensitive.

Gastro-intestinal upsets are particularly common in children, and are often brought on by taking eggs, milk, cereals, etc., to which they are sensitive. The breast fed baby reported above, with eczema as the result of being hypersensitive to mother's milk, vomited repeatedly, and had abnormal stools so long as it was on mother's milk. The gastro-intestinal symptoms completely disappeared when cow's milk was substituted.

There is another interesting condition thought to be brought about by protein hypersensitiveness, known as Henoch's purpura, a symptom complex in which purpura is associated with colic and other visceral disturbance, and various cutaneous lesions of the erythema group. Duke reports a case in which the symptom complex of Henoch's purpura was produced by the patient's eating rice, a food to which the skin test had been positive on a previous occasion.

We have discussed in the foregoing the more or less common manifestations of protein hypersensitiveness as clinical entities; in practice they appear most frequently in combination or in sequence. It is common to have urticaria, eczema, and hay fever, or urticaria, angio-neurotic edema, and gastro-intestinal upset on the one hand, and a history of a patient who as a child had eczema, and at the age of 15 hay fever, becoming a little worse each year until later asthmatic attacks develop.

It is evident, therefore, that the etiology of all disturbances caused by hypersensitive-

ness should conscientiously be sought for even in the infant, and the offending substance eliminated eternally from the patient's environment.

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DISCUSSION

J. W. Bruce: It may be interesting to say something about the subsequent history of the child, mentioned by Dr. Moore in his paper, that was very sensitive to chicken feathers. It began to wheeze when its mother entered the room wearing a hat trimmed with chicken feathers. Of course the mother has been careful never to go near the child since when wearing the hat with chicken feathers. The baby can eat eggs without any trouble, but cannot eat chicken soup without bringing on an attack.

I saw last year in consultation with Dr. Hayes Davis a child aged eighteen months who was subject to violent attacks of asthma. We had a skin test made and found the child was sensitive to cow's milk, egg, beef, barley and wheat. With a child only eighteen months old the problem of feeding is quite difficult with these five articles eliminated. However, we finally devised a dietary which was satisfactory. From having attacks twice a week the child then began to have one every two months. Further tests were made from time to time and the diet changed to meet the indications. The child made a complete recovery.

In regard to eczema: It seems to me that at least the eczema of infants is due to improper feeding and can be controlled to a great extent by being guided by skin tests. I recently saw a doctor's child five months old that had been fed on various milk mixtures and still had eczema. Various ointments had been used in treatment but nothing seemed to control the disease. Finally when the child was five and a half months old we gave it some cream of wheat and within ten days the eczema became very much more marked. At that time we decided to have a skin test made and found the child was sensitive to casein and also to wheat. No more cream of wheat was given and within a short time the eczema was much improved. We found the child was not sensitive to oats, barley and several other cereals and the dietary was arranged accordingly.

I recently saw a case with Dr. Moore, the patient being a child aged six months, who had always been the subject of eczema. This child was also given cream of wheat with the result that the eczema became much worse. We made a protein test and found the child was not sensitive to casein but was sensitive to wheat. It was not sensitive to oats. In view of the fact that the eczema had been made worse by giving cream of wheat, this was discontinued and the child given oat meal.

I merely mention these cases to show the value of protein tests especially in relation to infant feeding. It seems to me that eczema is largely a condition due to protein sensitiveness, and by making proper tests and dieting it is possible to do a great deal for these little patients. The condition of the gastro-intestinal tract seems to have a great deal to do with whether the child has eczema or not. By that I mean if the child is constipated the eczema will be much worse. Again, if the child has a little indigestion the eczema is made worse. In other words, if there is an excessive amount of fats or carbohydrates there will be produced an upset of the protein balance with the development of irritation of the intestinal mucosa followed by increased irritation or irritability of the cutaneous surface. I believe the majority of cases of eczema in children can be explained on the basis of protein sensitiveness.

Henry Enos Tuley: Dr. Moore has covered the subject so thoroughly that there is little left to say in the discussion. I wish to speak particularly of a point mentioned by the essayist in the latter part of his paper. I have noticed repeatedly that where a child as an infant had eczema, not infrequently the same child would develop asthma two or three years later. I recall one child particularly that gave me a great deal of concern long before we realized the importance of hypersensitiveness to certain food products. This child had eczema when a baby but he seemed to be completely relieved when about a year old. During the second year he developed severe asthmatic attacks. It seems to me, therefore, that in certain types of children, particularly those that are sensitive to one form of protein which may produce eczema in early life, will later be sensitive to others and then develop asthma.

A special field for study in connection with protein sensitiveness is in hay fever. I believe with proper isolation of the protein that is causing the trouble and the use of vaccine before the time the attack usually appears will enable the patient to get through the summer with comparative comfort. I am not sure that vaccine will produce entire relief after an attack of hay fever has developed but believe it will be of some help.

Rowan Morrison: I was very much interested in the paper read by Dr. Moore; it is on a subject which really demands our attention. It may be that these are peculiar individuals; often they have certain idiosyncrasies which we are unable to understand. To illustrate this I will mention a case which came under my personal

observation. A young man who lived in the country for many years married a girl from Oklahoma. She had never had anything like hay fever, rose cold, or irritability of the mucous membrane before coming to Kentucky. Shortly after her arrival she began to have severe attacks of sneezing, crying, etc. She returned to Oklahoma and had no more attacks. However, when she returned to Kentucky after a month she again began to suffer the same as before and applied to her physician for advice.

To make a long story short a skin test was made with various proteins and it was found she was very sensitive to the protein of corn pollen. Investigation showed that this man had his place in the country and as many farmers do feed stock around his house. As a result his wife was exposed to the protein of corn summer and winter. He was advised to let his wife come to the city and spend a month and to discontinue feeding his cows corn near the house. This was done and she has had no more attacks, but I do not know what will happen in the summer while the corn is in bloom. She may have to be desensitized, I am sorry Dr. Moore did not consider more deeply the question of desensitization as I believe a great deal can be done along this line. However, the process would probably have to be frequently repeated.

I often see cases of eczema in children such as those mentioned by Dr. Bruce. Many of them are undoubtedly due to defects in diet with improper protein balance. Before we knew anything about protein sensitiveness we became aware from observation that the eczema of infants was due to certain types of food. Many of these children recovered under the use of skimmed milk with the addition of a little sugar. No local treatment was used except to cover the skin with simple ointment as a matter of protection.

Many people are sensitive to flour, and we are all familiar with the so-called baker's asthma. I saw a man eight months ago who has been the subject of asthma ever since he became a baker. He abandoned his position as a baker and went into the grocery business. Investigation showed that he was sensitive to flour and especially the so-called wheat dust.

Another thing which should be mentioned about asthma in young children, and that is small quantities of the food to which they are sensitive may be given without producing an attack. However, if they have any gastro-intestinal disturbance they promptly have an attack of asthma. Sometimes a dose of calomel will bring about relief which cannot be obtained in any other way.

Ben Carlos Frazier: It is a great misfortune that babies are hypersensitive to certain foods and everything possible should be done to decrease this hypersensitiveness. I do not believe there are many of this class, but the fact remains there are some. I can recall several children who were hypersensitive to many thing in early life. I remember one girl in particular who had urticaria every time she went to the country. Whenever she spent a night in the country she would have an attack of hives. Investigation in this case showed that her attacks were due to cistern water. When she took a bottle of city water with her and drank no cistern water she did not have urticaria.

I recall a child who awakened one morning with the worst attack of angioneurotic edema that I have ever seen. That child has grown to be a young woman now; she has had no other attacks of edema, eczema or asthma; she has enjoyed freedom from such attacks for several years. These are unusual cases and Dr. Moore has described the cause of many of them. Formerly we did not understand the causative factor and the symptoms were attributed to some idiosyncrasy of the individual.

I have under observation now a man who has had asthma for many years at intervals. He is a mechanic and will sometimes go along for several months in comparative comfort then have a violent asthmatic attack. I expect to refer this patient to Dr. Moore to see if he can determine the cause.

Frank C. Simpson: Dr. Moore has given us a very instructive paper on a subject in which we have all been more or less interested during the last few years. Until the question of protein poisons was investigated we knew very little about the cause of eczema, asthma, etc. I recall several interesting cases of this kind seen during the last two years. One was a child about two years old who had eczema which was induced by eating fresh pork. As soon as pork was eliminated from the dietary of the child the eczema disappeared. In another instance eczema was due to the eating of celery. I remember that the late Dr. J. M. Ray reported before this society several years ago the case of a man who had angio-neurotic edema from eating celery. So long as he refrained from eating celery he had no further attacks. A similar case came under my observation a few months ago. The man was advised to eliminate celery from his dietary, and when this was done he had no more attacks of angioneurotic edema.

As Dr. Moore emphasized in his paper, I believe we should make tests for protein poisons in all cases of eczema, asthma and allied conditions. I am of the opinion much good can be accomplished along this line.

John E. Hays: I do not know that I am very well qualified to speak on this subject. I am not a laboratory worker although I have great re-

spect for laboratory findings especially when coupled with clinical data.

I wish to congratulate Dr. Moore on the practical paper which he has given us. We know that asthma and various types of eczema are caused by certain foods, but there are many other causes. I recall one case of recurrent asthma which gave the physician considerable trouble. The patient was a young woman. She was sent to an eminent specialist in the east and it was only after he had made forty-five tests that he discovered the cause of her asthmatic attacks was orris powder. The patient wisely refrained from coming in contact with that powder and her asthma disappeared.

As regards the various skin affections: We have been aware for a long time that eczema, especially in childhood, was due to food sensitization. Eczema in children is not a definite entity, it is a cutaneous reaction to some poison in the system. As mentioned by some of the other speakers these cases may be best relieved by making the tests mentioned by the essayist to ascertain the particular kind of food which is causing the trouble in each case. I think it has been demonstrated quite conclusively, however, that eczema in later life is not always due to food ingested. Angioneurotic edema is probably in every instance due to foreign protein. I have no doubt that in many instances cases diagnosed as eczema are simply cases of urticaria and careful examination of the skin phenomena would prove this.

So far as relieving the patient is concerned: It is important to make the tests described by Dr. Moore to determine just what protein is harmful in each case. The more we practice medicine the more we come to believe that many of the skin lesions of childhood (asthma, urticaria, erythema, pemphigus, etc.) are due to similar causes. We find also that certain drugs will produce skin phenomena very similar to those caused by proteins. For example, quinine is nonprotein in type but often produces urticaria quite similar to that due to certain foods. I would like for the essayist in closing to explain the action of quinine in producing such lesions. I do not believe it can be classified as an anaphylaxis. Some of the most persistent urticarias seen in my practice have been produced by drugs.

In the treatment of these cases I have used vaccines both stock and autogenous. More favorable results have been secured from the latter than from the former.

The subject is so wide that it cannot be satisfactorily covered in a brief discussion.

Wm. J. Young: I have greatly enjoyed the most excellent paper read by Dr. Moore. About five years ago when house surgeon in the New York Skin and Cancer Hospital we did considerable work of the character the essayist has described. At that time the Arlington Chemical Company marketed proteins in solution, and after working for about three months we found the solutions deteriorated rapidly and we were doing our work for nothing. We were unable to arrive at any definite conclusions. Since that time, however, protein has been placed on the market in powder form which can be preserved indefinitely. The latest form of protein is a paste made by Parke, Davis & Company.

Unquestionably this method of diagnosis has considerable merit, and as Dr. Moore has stated by employing the various protein tests we may arrive at definite conclusions with the result that we are able to relieve a large number of people. I would like to say, however, that we do not get one hundred per cent successful results by the tests described. I have had a number of failures and also some successes; my failures are in excess of my successful results. In fact I may say that I sometimes get a typical wheal from the skin protein test, which, so far as can be discovered, has no bearing whatever on the case in hand; but I am not saying this with any idea of detracting from the value of the method in any case. The fact is that the tests described by Dr. Moore are of inestimable value in both diagnosis and as therapeutic indications, but if one starts with the idea that he can take a case of eczema, erythema multiforme or some other skin lesion and by the use of these tests discover exactly what is the food protein which originated the trouble, he will not arrive at a definite conclusion very frequently. Of course when a successful result is obtained nothing can be more complete, the demonstration is perfect and absolute. Nothing could be more characteristic than the case mentioned tonight by Dr. Moore and Dr. Bruce under the heading of "chicken feathers."

The feature upon which I wish to congratulate Dr. Moore particularly is the technique which he has developed in making the various protein tests. I have seen him do some of this work and believe I can make the tests now with more or less success. As he has said it is seldom that any bleeding occurs; a small fissure is merely made in the skin into which the protein is placed, 1-10 of one per cent sodium hydroxide or distilled water being used. By following this technique the tests may be made on infants without any harm resulting.

Dr. Moore has done more than anyone else in Louisville toward perfecting the technique of making protein tests and we are certainly indebted to him for bringing the matter to our attention.

Leon K. Baldauf: It was my privilege to see a rather interesting case not long ago which is in line with the data given us by Dr. Moore. The patient came in for examination and proved to be sensitive to the protein of wheat. While we were making this test the man developed a typi-

cal asthmatic attack. Some time ago a child was brought to me who had been having severe asthmatic attacks. We could not obtain any very definite history from the mother but she seemed much worried about the child. A large number of tests were made in consequence of the inadequate history. After making many tests we found that the child was sensitive to pork. On questioning the mother rather closely we found that the child developed asthmatic attacks following the eating of bread which had been soaked in pork gravy. This was discontinued and the child had no further asthma.

I recently had under observation a patient who suffered from erythema multiforme which had persisted for eight or ten years. Various forms of treatment had failed to produce permanent benefit. When I suggested to her that she abstain from all animal proteins for a while it did not meet with much favor but she finally agreed. Within ten days after discontinuing the eating of meats the erythema had disappeared. Which one of the foods contained the offending protein we will determine later.

It has always been an interesting question to me why some people are sensitive to certain forms of protein, whereas other people are not sensitive to any one of them. I have been investigating the subject for two or three years. I recall one patient who was sensitive to a large number of food proteins, and when told to abstain from such articles of diet she remarked that "the cure was worse than the disease." Furthermore, she said "if she had to get along without all these foods she would rather have the disease."

The history of another case is rather interesting. A young woman developed a severe attack of urticaria, the wheals being enormous in size, following the use of a prophylatic dose of diphtheria antitoxin. She never had urticaria before that time. The skin lesions persisted and I suggested several times that it might be well to give her a dose of horse serum as a desensitizing measure against the sensitiveness brought about by the diphtheria antitoxin. Later she was under the care of a physician in the east who has been doing considerable work in this line and he suggested the same thing to her a month or two ago. I understand he has now sensitized her against horse serum and the urticaria has disappeared. It is interesting to note that urticaria quite frequently occurs after the use of diphtheria antitoxin.

R. Alexander Bate: I wish to express my appreciation of Dr. Moore's most excellent paper. A view into the past, along this same path is interesting. Many of you doubtless remember the auto-intoxication theory of Bouchard. The phenomena mentioned by the essayist were explained by Bouchard as arising from toxines generated in the system from disturbed metabolism. Alexander Haig in his work on the uric acid dyscrasia accounted for these phenomena (occurring in one and not in another exposed to the same causes) as due to a uric acid diathesis or an inherited inability to oxidise certain retrograde products developed in the metabolism of a specific class of food. Both were correct; and satisfactory clinical results followed their dictum. I reported some years ago the case of a distinguished jurist in whom asthma of twenty years duration was relieved by an anti-uric acid diet, alkaline and oxidative medication. Roast beef and tomatoes precipitated the first attack after an interval of two years without asthma. Relief followed return to prescribed diet and promotion of oxidation. It is very gratifying to demonstrate, even to the patient, a protein reaction now explained as anaphylaxis; as Dr. Moore has so well set forth. Auto-intoxication, uric acid diathesis and "anaphylaxis" are alike dependent upon endocrine causes. The so-called wandering leucocytes are believed to possess enzymes or "proteases," the molecules of absorbed substance and ductless gland hormones. Herein lies the causation of all the phenomena. Dr. Simpson has noted the occurrence of protein poisoning in several generations—a very clear demonstration of diathesis. If we express endocrine activity as endocrinosis; constitution or "functional habit," may be said to be due to endocrinosis. Diathesis or "inherited pre-disposition to disease" will be due to dysendocrinosis. Therefore let us go one step farther than slowly developing a "specific" (?) proteas by the use of the present immunizing preparations. Consider the endocrinopathy. Since the ferment is always "tryptic," and all hormones probably controlled by the posterior pituitary secretion—trypsin, posterior pituitary extract, oxidative and eliminating methods together with a prescribed—food list will often save our patients and ourselves much worry and loss of time.

Frederick G. Speidel: It has been my experience that multiple sensitization is the rule rather than the exception provided the patient is tested with a sufficient number of proteins. For example, a patient strongly sensitive to ragweed will very frequently give a mild reaction to golden rod or other plants which pollenize about the same time. Likewise patients sensitive to certain vegetables will react slightly to other vegetables of the same class, and the same thing holds true of animal proteins. I recall a child five years old who had asthma and who was tested and found to be sensitive to chicken feathers, chicken meat and also to eggs. Chicken meat and eggs were eliminated from his diet, he was placed on a mattress and pillows of felt, and his asthmatic attacks subsided. I also recall a patient representing a type where considerable difficulty is usually encountered in determining the cause of the trouble. The patient consulted me

for urticaria about January 1st of this year. He was tested and found sensitive to so many foods that I was unable to draw any conclusions. I then recalled that it was just after Christmas week and he had been eating almost every article of diet that could be procured during that week. His diet was restricted to a few things, and as his urticaria persisted, it was then comparatively easy to discover the causative factor.

It is sometimes quite difficult to test a hay fever patient for all the plants that might pollenize at any season of the year. However, it should be borne in mind that such plants as the sunflower, golden rod, etc., which have the brightest colored flowers depend, for the transfer of their pollen from one flower to another, upon insects. The insects are attracted by the bright color of the flower. The more insignificant plants such as the ragweed, red top and many others depend upon the wind to distribute the pollen. The latter type of plants are more prolific causes of hay fever than plants whose pollen is distributed by means of insects because their pollen is lighter in weight and is carried greater distances.

There are not many cases of hay fever due to corn except among those who work directly in the corn fields, because corn is fertilized by the pollen dropping from the tassel downward upon the ear. Corn pollen is very heavy and is in no sense wind borne.

By remembering a few of these practical points we will be saved a great deal of unnecessary testing.

Oscar W. Doyle: I regret that I did not hear Dr. Moore's paper, as the subject of protein sensitization is one in which I am tremendously interested. I agree with everything Dr. Simpson has said; he has expressed the views which I hold.

I have done considerable work with proteins during the last two or three years, and desire to call attention to a condition which we have termed "the influence of associated proteins"; that is, the behavior or action of one protein in the presence of another or others. To illustrate: I have under observation a young man in whom food protein tests reveal him hypersensitive to beef, pork, oats, wheat and potatoes. On experimentation it was found that he could consume fairly large quantities of any one of these foods so long as he did not eat any of the others within a twenty-four or forty-eight hour period; but when taking two or more of these foods within the twenty-four or forty-eight hour period he was sure to exhibit full reaction. By avoiding the taking of any two or more within the same period he was able to get along very comfortably and has apparently developed his own immunity, because during the past year he has eaten almost anything he liked without development of asthma or any of his previous symptoms. We have seen several other cases in which we have been able to demonstrate the effects of associated proteins.

I am quite sure if you would study proteins from their reactions and also from the standpoint of associated proteins, you would be able to corroborate what I have said and to develop some very interesting things.

As has been suggested, by keeping record of foods which the patient eats and their influence, with resultant symptoms, considerable amount of test work may be avoided.

F. C. Askenstedt: Inasmuch as we can not very well treat the whole year around a patient who is sensitive to pollen, it is usually best to advise such a patient to avoid exposure; but when the sensitizing agent is one of our common food stuffs, such as milk or egg, it is inflicting an unnecessary deprivation to the patient to strike such articles from his dietary. Patients seem to be easily desensitized to such food stuffs by at first feeding the very minutest quantities, then slowly increasing the amount until desensitization is complete, and by continuing the feeding this desensitization can be maintained.

I recall a boy who would have an eruption every time he ate any food material containing egg, raw or cooked. The skin test showed him sensitive to both the yellow and the white of raw egg. He was put on very minute and gradrally increasing doses of raw egg diluted in water, and in a couple of months he could eat cake and other food containing egg, with impunity. When I last saw him the mother was still afraid to risk pure egg food, though he had had no trouble. I recall another patient who proved sensitive to milk and was treated successfully along the same line. I am also reminded of a patient I saw about two years ago in a hospital in Sweden. He was suffering from psoriasis, not the nummular but the extensive scaly type resembling ichthyosis, and had been treated by a number of physicians without relief, when the doctor who presented him began to treat him with boiled milk hypodermically, starting with two drops. Marked improvement followed, and when I saw him he had almost recovered. Whether sensitization to milk had been demonstrated before the treatment I do not know, but I infer from the improvement that the treatment must have been a desensitization.

E. F. Horine: The study of protein sensitization is certainly a very interesting one. I think it appeals to us particularly because of its specific nature and because of the fact that by proper treatment we can relieve many of these patients.

I wish to speak particularly with reference to interpreting the test for protein sensitization. Given a negative test we are not absolutely sure that the patient may not be sensitive to that particular protein. That is true for this reason: that we know the anaphylactic state to be fre-

quently cyclic in character even though the protein or food element be taken continuously; therefore, in attempting to test the patient during this period of desensitization you will get a negative reaction, and unless you are on the lookout for that you are likely to disregard the negative reaction entirely and in that way fail to determine the actual protein causing the trouble. This so-called period of desensitization has been termed an anti-anaphylactic state and we should always be on the lookout for this and in the presence of a negative reaction be rather careful in interpreting that result as absolutely negative.

With reference to multiple sensitization to the various proteins and pollens: I have found that with asthma the patient quite frequently is sensitive to a number of proteins; whereas in hay fever the patient more frequently is sensitive to one pollen. For instance with ragweed, of which there are two types, the short and giant, one will frequently find the patient sensitive to one type only, either the short or giant. Of course by applying the proper treatment a considerable degree of relief may be secured, and after several years probably the patient will be entirely relieved, though it is certainly true that hay fever is more amenable to treatment than asthma.

John W. Moore (closing): In a large percentage of cases of protein sensitization producing the results described in my paper the defect has been handed down from the preceding generation. This applies to eczema, asthma, angioneurotic edema, etc. Longcope and Vardeman have done a tremendous amount of work along this line and have shown the influence of heredity not unlike the Mendelian law. The defect may skip one generation only to appear in the next.

As to the cause of this hypersensitiveness little is actually known and everyone has a different theory. The literature of the subject is quite extensive, but the more one reads the greater is the confusion, because there are so many theories and such a paucity of real facts.

It is supposed quinine produces cutaneous manifestations in the same way that protein does although it is a non-protein substance. We know that many individuals are hypersensitive to arsphenamin which is also non-protein in type. Longcope has reported several cases where patients were sensitive to 1:100,000 intra-dermal injections of arsphenamin. And intra-dermal injection of this substance is the only way to determine whether the patient is hypersensitive or not, and it does not take much to produce a decided reaction.

Some times a large number of tests have to be made before the offending protein can be determined. Of course these tests are of great diagnostic importance but they are time-consuming. It has been found necessary in some instances to test every article of food eaten by the patient; one cannot take the patient's word in matters of this kind, especially when favorite articles of food are sought to be prohibited. Some individuals have been found sensitive to as many as five different kinds of food.

Dr. Horine's statement is quite true about anti-anaphylaxis, especially when the test is made by the scarification method; but we find few cases of this type when tested by the intradermal method. In severe urticaria and especially in angioneurotic edema we cannot be satisfied with the scarification test alone and the intra-dermal test should always be used. I think a good rule is to go ahead and test the patient with some thirty different proteins if necessary to determine which one is causing the symptoms. Should all of these react negatively, then the intra-dermal method should be convenient. This has been found necessary especially in angioneurotic edema.

With regard to multiple reactions: Dr. Simpson spoke of a type of case where the least scratch of the skin surface produced a reaction. The reason I advocated the use of a sharp safety razor blade in making the scarification test was that it causes very little trauma. I do not believe I have ever seen a decided reaction from scarification alone, if an exceedingly sharp instrument and little pressure is used.

In the paper I only touched lightly upon the various phases of this subject and purposely omitted description of the various forms of anaphylaxis. A volume could be written without exhausting the points of interest, the subject is so large.

Nonspecific Irritation Cause of Anaphylactic Diseases in Childhood.—Attention is directed by Shannon to the frequency with which certain diseases, alleged to be anaphylactic, are precipitated by local irritation of nonspecific nature. Experimental work on rabbits by Auer is quoted to show that the anaphylactic state increases the response of the animal tissues to local irritation. Analogous cases in man are cited in which neither the local irritation nor the anaphylactic state alone were sufficient to produce symptoms but in which the combination of the two produced the disease picture. In two cases local irritation did not produce symptoms after the anaphylactic state had been removed. In another case the reduction of local irritation did not permit relief from symptoms until the factor of anaphylaxis was cared for. It is therefore contended that the condition of anaphylaxis is the underlying factor which is responsible for the conditions mentioned and that the local irritation is merely a precipitating factor which would go unnoticed were its effects not augmented by the presence of the anaphylactic state.

MASTOIDECTOMY WITH SPECIAL REFERENCE TO CLOSURE OF THE WOUND.*

By S. Shelton Watkins, Louisville

I wish to bring to your attention a technique for performing the so-called simple (conservative is a better term) mastoidectomy, which has points that merit your consideration. I will not attempt to describe other methods by which this operation can be successfully performed, because it would consume too much time. For the same reason, I will not discuss the radical operation and the treatment of complications, such as brain abscess and sinus thrombosis. Also, these conditions are not of general interest.

After preparation of the patient and the field of operation, the incision is begun one-fourth of an inch behind the superior attachment of the auricle and is continued in a slightly curved line down to the top of the bone. The skin, fascia, muscle and periosteum are cut through at the same time and, after the hemorrhage is controlled, they are retracted together. Care is taken to avoid tearing the periosteum. It should be separated from the bone well forward and backward. If a perforation is found in the cortex it is enlarged toward the antrum. If not, an opening is made through the cortex about one-eighth inch behind and on a level with or slightly above the suprameated spine. It should not be higher than the superior osseus wall of the external auditory canal, in order to avoid entering the middle fossa, which extends quite low in some brachycephalic skulls. The opening is started with a perforator and it is enlarged with a small burr (3-16 inch in diameter), which makes a clean hole with a minimum of bleeding, does not fracture the bone and is easy to control. The direction is straight inward. In a majority of cases this will lead directly to the antrum. Sometimes the sigmoid sinus is found abnormally far forward, but with due care the danger of entering it is very slight. As soon as the antrum is located a culture for bacteriological study is taken. Then the operation is continued by removing the diseased portion of the cortex, which is done quickly with bone ronguers. The antrum serving as a landmark, the exenteration of the bone is made somewhat in a circle; first downward and backward toward the tip and sigmoid sinus, then upward and forward toward the middle fossa and the zygomatic cells, and, finally, forward along the posterior bony wall of the external auditory canal. In removing the cortex many of the partitions between the cells are necessarily broken down. The remainder and the infected granulation tissue are removed, chiefly with curettes. The inner wall of the antrum and the passage to the attic are not curetted because of the danger of injuring the horizontal semicircular canal and the facial nerve. The granulation tissue in this area can be satisfactorily removed by gently mopping with gauze. The posterior edge of the lateral wall of the antral passage may be curetted in adults, but care must be taken to avoid injuring the incus. This is contraindicated in children, because the incus is much closer to the aditus in childhood than in adult life.

The diseased tissue is removed in every direction until healthy bone is reached. If necessary, the dura of the sigmoid sinus and of the middle fossa is exposed. It is better to do this than leave them in contact with diseased tissue, because of the danger of the infection eventually spreading to them. Enough bone (one cm. or more, in diameter) should be removed to give a good view of the dura, in order to make certain of its condition and, also, for better drainage in case its outer surface has become infected. Granulation masses in the region of the sigmoid sinus and middle fossa are probed before removal to make certain that there is no connection with these structures. Not infrequently granulation buds from their membraneous surfaces may extend through dehiscences or necrotic areas in the bone. The same cautions is taken when working in the region of the facial canal and the face is watched for twitchings.

Frequently a portion of the posterior osseus wall of the external auditory canal is removed but extensive infection of it is very rare and practically always enough can be left to properly support the membraneous canal.

Care is taken throughout the operation to avoid working in a deep and narrow cavity. It should be made as near saucer-shape as possible, so every step can be taken under good vision. Of course, all spicules of bone and ledges are removed. The former have poor circulation and are prone to infection; the latter interfere with drainage. But, no effort is made to "polish" the cavity, which procedure both wastes time and injures the circulation. Also, all tissue tags and particles of bone are removed. Just before closing the soft tissues, an iodoform drain (5%), one-half inch wide and with selvage edges, is placed in the antrum up to the aditus and carried out the lower end of the wound. Whenever the dura has been exposed, a separate drain is placed over the exposed area and carried out through the upper end of the wound.

The closure is made in two steps. The first consists in suturing the periosteum, muscle and fascia with plain (num-

*Read before the Jefferson County Medical Society, February 19th, 1923.

ber one) catgut, in interrupted stitches and about one-quarter of an inch apart. An opening of about one-half an inch is left at the lower end of the incision through which the drain extends, and, when necessary, another opening can be left at the upper end for a second drain. The skin is closed with interrupted sutures of medium black silk, one-fourth of an inch apart, leaving space for the drains, as just described. The usual dressing and bandage is applied.

On the third day after operation the bandage and dressing are taken off, the drain removed and, if there is any sign of discharge, the wound is irrigated with Dakin's solution. The drain is replaced. Afterward this is done daily until the wound has healed.

When there is a sub-periosteal abscess and the soft tissues have become infiltrated with pus, this method of closure is not suitable because the tissues will not hold the sutures. Again, when the infection seems to be very virulent or there is reason to suspect an intracranial complication, it is better to leave the wound open temporarily and later close it under local anaesthesia.

When necessary, myringotomy and adenoidectomy are performed after completing the mastoid operation.

This method of operating on the mastoid bone has three advantages that I wish to emphasize.

First, the importance of localizing the antrum at the beginning of the operation. Every mastoid has an antrum regardless of the structure of the cells. When in doubt it serves to guide the operator. It is situated like the hub of a wheel around which are grouped the danger areas, and, knowing the location of the former, injury of the latter is more easily avoided.

Second, the chisel and gouge driven by the mallet are rarely used. One can never tell when one of these sharp instruments will slip and cut deeper than is intended. Also, there is some danger of fracturing the bone beyond the area to be chiseled. Such an injury to the Fallopian canal could easily cause facial paralysis. Again, in unsuspected cases of sinus thrombosis, brain abscess or circumscribed labyrinthitis, the jar may cause rupture of the diseased wall and spread the infection.

Third, the closure of the wound saves much time for both the patient and operator and greatly lessens the suffering. Also, although a secondary consideration, the cosmetic result is not to be ignored. The speaker has performed this operation a number of times during the past six years, and he has never found it necessary to continue post-operative treatment after one month. Most cases healed within two to three weeks after the operation. A few healed entirely in less than two weeks. The duration of the post-operative treatment by the open method varies from six weeks to six months, with an average of from two to three months. Also, the treatments are more painful because of the larger area exposed to manipulation. Finally, when the wound is sutured very little depression occurs. We are all familiar with the sunken wounds that follow the open treatment, which are always disfiguring and sometimes quite unsightly.

The blood clot method of treating the wound as recommended by Blake and Reik, in which it is completely sutured without drainage is ideal when successful, but it is often a failure. It presupposes thorough removal of all diseased tissue, of which one cannot be certain. In a good percentage of cases, an abscess forms and the wound breaks down, after which it must be treated by the open method. It is true that the blood clot has some antiseptic power but not enough to rely upon in the majority of cases of mastoiditis.

In closing, I wish to say this operation is practically the one used by Dr. S. J. Crowe, at the Johns Hopkins Hospital, in Baltimore. I am not certain of its history. The exenteration of the bone is similar to that part of the operation described by Macewen in his book: "Pyogenic Infective Diseases of the Brain and Spinal Cord," 1893; and the closure is a modification of the Blake-Reik blood clot method, first described by Blake, in the transactions of the American Otological Society, in 1898. The closing of the wound in two layers is original with Dr. Crowe.

DISCUSSION

M. C. Baker: I have not had very much experience with the method described by Dr. Watkins. I have performed the operation as he has outlined two or three times recently and had good results. I have observed the operation as performed by other men in the same way, and as Dr. Watkins says the wound heals as a rule in two or three weeks. In my opinion it is the ideal method of performing mastoidectomy and certainly has many advantages over the old way of leaving the wound open, which as the essayist has said often leaves the patient with considerable deformity. I believe in the future this is going to be the accepted method of closure of the mastoidectomy wound.

S. S. Watkins (closing): I wish to thank Dr. Baker for his discussion and, to say that I am glad to know that his views are in accord with mine.

There are two matters that I would like to mention, which I considered advisable to leave out of the body of the paper. The first, is in re-

gard to localizing the sigmoid sinus previous to the operation. During the last few years the technique of x-raying mastoids has been very much perfected and it is now possible to determine very accurately the location of this sinus, which knowledge greatly lessens the danger of injuring it during the operation.

Second when the x-ray film shows the mastoid to be very large and the cells extend far posteriorly, it is advisable at the beginning of the operation to make a second incision. This is made about an inch long, is placed in the horizontal line and bisects the first incision.

PRIMARY CARCINOMA OF LIVER. REPORT OF ONE CASE.*

By J. A. Kasper, Louisville

Primary carcinoma of the liver is comparatively rare. Hale White[1], in reporting statistics of Guy's Hospital, placed the incidence as .1% in 11,500 autopsies. Since then others have found it somewhat more frequently. Although most common in individuals between forty and sixty years of age, it has been noted in children as early as one week. Castle[2], in reviewing the literature of the world from 1841 to 1913, collected 42 cases occurring in children from one day to 16 years of age. Other cases have been reported since then by Karsner, Wollstein and Mixsell[4] and by Henke[5].

Primary carcinoma of the liver is generally divided into three groups:

1. Massive type. In this are those tumors which involve whole lobes or large portions of the liver. The tumors are poorly defined and usually consist of masses of soft substance with occasional smaller nodules present in other parts of the organ. This type has as its "type cell" the parenchymatous cell of the liver trabeculæ.

II. Nodular type. This type includes those tumors which are frequently referred to as multiple primary carcinoma or adenocarcinoma of liver. There are many fairly well defined nodules scattered throughout the organ. This type grows very rapidly and degenerates quickly. It usually has its origin from the bile duct epithelium.

III. Diffuse type. Here the liver is diffusely infiltrated with small groups of tumor cells imbedded in dense connective tissue which is found in all portions of the liver, and which due to contraction often gives the organ the appearance of cirrhosis. This type is very rare. It also has its origin from bile duct epithelium.

The etiology is as obscure as in other forms of malignancy. Congenital maladjustment of groups of liver cells, predisposing them to tumor growth, seems to be a rare factor in adults, while possibly of more importance in infants and with solitary tumors. (Ewing)[6]. Fatty and degenerative changes have been suggested as preliminary to neoplastic formations in islands of cells separated by connective tissue, but these changes have not been constant. Cirrhosis, according to Eggel[7], is said to be the chief predisposing factor, occurring in about 85% of liver tumors. Hemachromatosis, echinococcus cysts, distomiasis and schistosomiasis have been found associated with carcinomata of the liver.

As nearly as can be determined from the reports of other observers, the massive type seems to be most commonly found in early life. The other two types, which as a rule have their origin from bile duct epithelium, are common in later life.

The cancer herein reported occurred in a married colored woman aged 25 years. I. G. was admitted to hospital in state of coma, September 29th, 1920. Family history: Patient was said to be four months pregnant. Had had bloody vaginal discharge for several weeks. Present illness: Felt perfectly well until 24 hours prior to admission when she went into state of coma from which she did not rally.

Physical examination: General appearance that of a fairly well developed, poorly nourished, black, unconscious female. Thorax: Heart sounds hardly audible because of many mucous rales throughout chest. Abdomen: Lodge mass, extending from ensiform cartilage to level three inches above umbilicus and downward left side to anterior spine of ilium. Entire mass movable laterally.

Laboratory findings: Urinalysis. Dark amber, very turbid, acid. Albumin + Sugar negative. Many pus cells, amorphous urates. No casts. No red blood cells.

Blood Count:
Erythrocytes—6,000,000 per c. mm.
Leucocytes—14,350 per c. mm.
Differential:

Neutrophile polys.	80%
Basophile polys.	1%
Small lymphocytes	18%
Large lymphocytes	1%

Hemoglobin: 80% (Talquist.)

On admission temperature was 97 degrees ax.; P. 118; R. 28.

Sept. 30th, 1920. Patient was sent to operating room where right rectus incision disclosed large bluish tumor below right costal margin and extending downward. There were many adhesions to intestine. Uterus

*Read before the Jefferson County Medical Society.

and oviducts negative. Right ovary was enlarged and adherent.

A diagnosis of probable lympho-sarcoma was made and abdomen closed. Patient died about 10 hours after the exploratory operation.

Autopsy findings. Autopsy (A-20-60) performed 12 hours post-mortem. Body is that of well developed adult negress. No edema, no evidence of jaundice. Recent surgical incision noted. Peritoneal Cavity. Panniculus adiposus 20 mm. thick and bright yellow. Large mass, apparently left lobe of liver, extends downward to level of umbilicus. No free fluid in peritoneal cavity. Heart negative. Lungs. Left lung negative. Right lung shows slightly diminished crepitation in spots, especially in lower portion of superior lobe. On section, small patches of brownish-gray are found scattered about. These appear well circumscribed. Spleen negative. Gastro-intestinal tract. Searched carefully for focus of malignancy; none revealed. Pancreas negative. Liver: Weight 3950 gms. All surfaces of liver contain rounded, yellowish gray nodules which protrude slightly. Inferior portion of left lobe consists of a softened, boggy mass which extends to level of umbilicus. This mass is 11 cm. in diameter. Externally it is fairly smooth and bluish gray. On section it is found to be very mushy and is composed of gray, friable substance. Nodules found in other portions of liver parenchyma are fairly firm, well circumscribed and pale yellowish gray. Largest of these is 35 mm. in diameter and smallest is 10 mm. Cut surfaces appear homogeneous with slightly softened centers. Gall bladder is filled with dark viscid bile which flows freely through opening of common duct. Mucosa of gall bladder appears normal. Kidneys. Both about normal in size. On section each presents dull gray, slightly "boiled" appearance with poor differentiation between cortex and medulla. Adrenals negative. Bladder negative. Genital organs. Uterus and oviducts negative. Left ovary normal. Right ovary 4x3x2 cm. and fluctuating. On section simple and hemorrhagic cysts found. Brain negative.

Anatomical diagnoses: Primary carcinoma of liver: Lobular pneumonia, right: Simple and hemorrhagic cysts of ovary.

Microscopical examination of liver. In four sections cells of varying sizes and shapes are found together with practically normally arranged liver cells. The atypical cells, almost in general, are granular and contain markedly hyperchromatic nuclei. Many mitotic figures are present. In some areas the atypical cells which are polyhedral, round or spindle shaped, are arranged in round glandular formation, bounded along the periphery of these masses by sinuses containing few lymphocytes and red blood cells. In other areas there is a slight increase of fibrous stroma in which the connective tissue fibres are arranged in layers. Between these bundles of connective tissue fibres are noted irregular cords of large, polyhedral cells with granular cytoplasm and hyperchromatic nuclei with many mitotic figures. There is a third type of arrangement. In this form the cells are small and as a rule round. In many instances the cytoplasm is absent, the cells having a vacuolated appearance. Here, as in the other two types, the nuclei are hyperchromatic. In the first and second types of arrangement described the cells resemble liver cells. The portions of liver not involved by the tumor have a compressed appearance with the shapes of the liver lobules greatly distorted and most of the cells are arranged in elongated cords. Between many of these lymphocytes are found in large numbers. Microscopic diagnosis: Carcinoma of liver, primary.

Comment: The case reported is interesting because of the age of the individual and the type of tumor which is one of the rarest of primary cancers of the liver. There is no apparent etiology but it is most probably that type which results from congenital maladjustment of a group of liver cells.

In the diagnosis a very difficult problem presents itself. About the only points which would lead to a diagnosis are:

I. Progressive enlargement of abdominal mass.

II. Sometimes icterus, but only in those cases where there is biliary obstruction and cirrhosis.

III. Rapid loss of weight.

IV. Digestive disturbances.

Sometimes the temperature is high, but this usually occurs as a terminal manifestation.

The terminal course, which is almost always fatal, is rapid and extends over a period of several weeks to six months at most.

Treatment is unastisfactory. Surgical intervention is the only recourse and then only in those cases which present an easy access to the tumor mass. One such case has been reported by Castle. The tumor, in a 10½ months old individual, was pedunculated. This was removed and the patient left the hospital after an uneventful recovery. He died several days later as the result of an acute enteritis which developed a day after leaving the hospital.

The tumor in the case reported was unsuitable for preservation. However, I am exhibiting a necropsy specimen from a similar

case which came under observation at a later date. It will be noted that the neoplasm involves almost the entire left lobe of the liver; it occurred in an individual seventy-three years old who also had generalized trichinosis.

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PRESIDENT'S RETIRING ADDRESS.*

By ROBERT T. HOCKER, Arlington

After expressing my gratitude to you for the great honor of electing my by unanimous vote, President of one of the best County Medical Socicties in our state or elsewhere.

This being the third time you have so kindly promoted me, I will direct your attention to some points that are important to all medical men. We have met quarterly for twenty-seven years, missing only two or three meetings.

We met monthly for one quarter. About one-hundred and ten meetings have been held. The attendance has always been good; we doubt the percentage being excelled in the state, we do not wish to over estimate but we feel quite sure that there has been an average of three papers read per meeting.

The October issue 1922 of the Journal shows that our County Medical Society ranks second in the number of papers published for the preceeding year.

We have by dint of talent, energy and untiring perseverance attained a proud position, and we entertain no doubt that we can maintain it. Usually retiring addresses are largely advisory. I do not indulge a hope of imparting instruction to the splendidly equipped gentlemen composing this body.

A brief resume may not be wholely unprofitable. It is a great mistake for a physician to have any other occupation. To attain the best to which he is capable, he must assiduously devote his time and talent almost exclusively to the study and treatment of diseases.

He should not fritter away his time when calls are to be made, but respond promptly to all. He should dress reasonably well, and of all men should keep his person clean; look closely after his linen and all other apparel. In a little over half century's experience I have never promised to cure a patient; no doctor ever should. It is needless to suggest we cultivate friendly relations with our professional brethren. I do not suppose that there is a county in our state that excels us in courteous deportment toward our colleagues.

We should have no drink or narcotic habit; clearly it is a Christian duty to take the best possible care of our bodies, for God created them and intrusted our physical make-up to our care. We should set an example worthy of emulation by the laity. We can live without luxuries and some of the comforts of life, "but no man can live without dining."

From the beginning a physician should exert himself as a collector. A patron is more grateful when the service rendered is of recent date. If we appear indifferent as to payment we need not be surprised if our patrons act in like manner. Never under-bid for patronage, it is degrading to the profession.

A doctor's first great incentive to action is a desire to be useful; this can not be too highly commended. To "put money in his purse" is a necessity in order to meet his obligations to himself and those having prior claims upon him. Surely it is not wrong but commendable to accumulate whatever you can honorably.

Gratuitous service to the clergy cannot be too forcibly condemned. A worthy minister deserves to be treated as a gentleman of good financial standing not as a pauper.

Does the preacher serve the doctor gratis; most assuredly not. Service thus rendered lowers the status of the profession and lessens the independence and respectability of the clergy. A physician having an average practice, if a good collector, and a fair manager ought to be able to retire at the age of sixty.

What percentage of them are in a position financially to quit at the age given. The great majority of them begin poor and must continue to work until disabled by disease or infirmities of age. Ours is the most unselfish vocation on earth. The friend of all, the enemy of none, we respond to the calls of the dwellers in the hovels of the poor as promptly as to more fortunate occupants of palatial homes.

The same faithful efficient work is performed for all subjects of affliction. Having taken the helm of the vessels of life, in our own hands we endeavor as good seaman to guard against rocks and bars and guide it safely into the haven of health.

We are at the call of our patrons at all hours, regardless of weather, bad roads, our business, and even the state of our own health. Often we make visits to patients whose physical condition is far better than our own. I began the study of medicine October 15th,

*Delivered before the Carlisle County Medical Society.

1856, the progress in our art during that period of time has been phenomenal.

The great value of bromide of potassium as a remedial agent was just being brought to light, chloral hydrate was adopted about 1872. Local anaesthesia began in 1866. We used no antiseptics except permangate of potassium, and chlorinated soda. We did not appreciate strychnine as a heart tonic, stimulant and digestant. Listerism was first practiced in America in 1880. We had not learned the inestimable value of iodine as an aseptic and antiseptic, nor that of mercury bi-chloride. In fact we knew very little indeed of antiseptics and less of asepsis. Need we mention the discovery of the Klebs-Loeffler bacillus or diphtheria antitoxin, tuberculin and typhoid vaccine. Hypodermic medication began about 1867.

Fever thermometer was first used in 1873. A correct diagnosis and appropriate treatment was considered as embracing the whole duty of a physician. Now we spend much of our time in advising them how to keep well. Suggesting frequent bathing, careful dieting, regularity of habits, plenty of out-door exercise and so on ad infinitum. The wonderful results of scientific research justify surely a pardonable pride in our calling.

But the greatest glory of modern medicine is the prevention of disease, well nigh perfect treatment of the afflicted reinforced by sanitation has added a span to the brevity of human life of about thirteen years. From 1860 to 1880 there was an increasee of three years; from 1880 to 1920 a gain of ten years. Anti-toxin has decreased the death rate from diphtheria from 47 to 11%. Since 1860 the death rate from smallpox, the result of vaccination, has been lowered 90%.

One hundred years ago 90% of subjects of the disease died. One hundred years ago the death rate from smallpox was larger than the death rate from all diseases now. The death rate of Kentucky of 1921 was the lowest since its organization as a state. Doctors are the only people on earth who are continually endeavoring to annihilate their calling by keeping their patrons well.

In all ages, even 400 years B. C. the medical man occupied an enviable position in the estimation of intelligent people. For these 23 centuries it has numbered among it votaries the peers in point of ability of any profession on earth. 400 years before the coming of our Saviour, when the great Grecian philosophers, Socrates and Plato by their great learning were centers of attraction. Hippocrates the Father of Medicine was practically far superior to either of them.

While they were great thinkers they had but vague ideas of evolution or physics. Hippocrates added largely to medical art and science; broadening in a great measure the basis upon which the grand superstructure of medical science has been built.

In 1875 when the birth of our great nation occurred, when Washington, Jefferson, Franklin, Hancock, Henry, and Greene were so prominent, it pleased God to place among them Dr. Benjamin Rush, easily the peer of any of them. During of Saviour's earthly career the most prominent among his Apostles were Peter, the brave impulsive leader and John, so sweet spirited and beloved.

Another, not an Apostle but a faithful disciple, Luke the beloved physician, whose profound attainments placed him in such an exalted position that not one of the Masters constant associates were on a parity with him. When the unsuccessful Southern Revolution was on great armies being lead by such illustrious commanders as Grant, McClellan, Buell, Rosecrans of the Federal, and Stonewall Jackson, Albert Sidney and Joseph E. Johnson, S. B. Buckner, John C. Breckenridge, and that illustrious soldier Robert E. Lee. of the Confederate service.

J. J. Woodward, J. F. Hamilton, Dr. Woodworth, U. S. A.; Paul F. Eve, Stuart McGuire, Warren D. Stone, John J. McDowell, our own David Yandell, Confederate Service, and thousands of others were bringing by their efficiency added glory to our noble profession.

In the Spanish-American war our splendid Doctors performed their duty nobly and well. We recall but one Western-Kentucky Surgeon in that war to wit: Dr. Frank Boyd, of Paducah. now President-elect of the Kentucky State Medical Society. Here as ever he sustained his splendid reputation as a surgeon.

When the World War burst upon us the doctors responded promptly to their country's call. Carlisle County did herself proud. Commissions were issued to wit: Capt. G. W. Payne, Duplin S. Robertson, John F. Dunn, Thomas A. Pease, and Hazle P. Mosby. Dr. Mosby being later promoted to Captain. Dr. Payne, because of a slight physical defect was not given an assignment, and was honorably discharged.

Drs. William L. Mosby, Reuben C. Burrow, T. Juett Marshall and H. A. Gilliam volunteered, Dr. Mosby failed to get in because of being on the board of examiners. Dr. Burrows' physical ability was doubted, while Drs. Marshall and Gilliam were not accepted on account of physical trouble. From references made to Drs. Burrow, Payne, Gilliam and Marshall erroneous impressions might be made, every one of them and every doctor in our county is able to do a man's work.

Those who entered the service did first class work. This body is fully justified in its estimate of them; that they not only made an enviable reputation for themselves but reflected honor upon us. Dr. W. Z. Jackson would have volunteered but learned through an ex-Army Surgean and two army surgeons that he could not possibly enter the service because of a skin eruption. All applicants for service not accepted and Drs. H. T. Crouch, W. Z. Jackson and your essayist agreed to treat all persons who had been rejected gratis. Hoping that some of those might become fit. What great physicians have accomplished by their wonderful originality is beyond the portrayal of my poor pen.

We will mention a few, William Harvey the illustrious discoverer of the circulation about 1628. John Hunter who first discovered the lymphatic system and his brother William who first learned their function about 1728. Edward Jenner, the originator of vaccination imparting immunity from small pox like the Hunters an English physician; some writer has referred to him in this language, "Immortal Jenner, whose gigantic mind gave health and wealth to more than half mankind."

Pasteur who originated a vaccine which has proved a great boom in the prevention and treatment on hydrophobia. Robert Koch who discovered Bacillus of Tuberculosis in 1882 and in 1890 announced the making of Tuberculin, which he hoped to be a cure for consumption. Long, a Georgia doctor, who in 1841 used ether in minor surgery, antedating Dr. W. T. G. Morton's demonstration of it by five years.

Dr. Brashear, the first to perform a hip joint amputation in America. Klebs and Loeffler discoverers of the Diphtheria Bacillus.

In 1809 Ephraim McDowell, of Danville, that great and good Kentucky doctor the Father of Ovariotomy; performing this unprecedented operation, blazing a pathway along a line then untrodden. Had no other contribution to the physical well being of the race been made than the grand work along sanitary lines of Dr. Joseph N. McCormack every Kentuckian might well consider that our state occupied an enviable position. Is it claiming too much to insist that he did as much for suffering humanity as any man that ever lived.

Our meetings have been inspiring. We feel sure that we have been better students, better physicians, better men, by reason of its influence.

This production has meant considerable labor but if it has contained a thought that in a small way is helpful to any member of this body we shall feel amply repaid for the effort.

A CASE OF ACUTE OSTEO-MYELITIS.*

By John D. Trawick, Louisville

On Feb. 18, 1922, case No. 1601, female, was admitted to the Children's Free Hospital on my service. Seeing her about an hour after admission, I found a very sick child, evidently suffering severely. The history was obtained from the attending physicians and family about as follows. First complaint of right hip was about seven months previously when child fell in attempting to sit down. She limped for several days, walking on toes of right foot, stating that her hip hurt when she bore full weight on foot.

She apparently recovered from this until about two weeks previous to this illness, began to complain of burning on urination with inability of control. Four days previous to entering hospital mother states that child complained of pain in right hip and groin, coming home from school crying from the pain.

During these four days the doctors in attendance suspected a rheumatic arthritis, and gave antirheumatic treatment. Thinking that it might be an osteomyelitis when she did not respond to the treatment, she was brought to the hospital for surgical treatment.

Her temperature on admission was 105 2-10 F. There was semi-delirium present, muttering, excited talkativeness alternating with moments of comparative lucidity, inactive contracted pupils, rigidity of muscles in neck, causing some of the consultants to think first of meningitis as possibly of primary significance. Pain was very definitely referred to right hip and upper right thigh.

Some rigidity of muscles in right lower abdomen gave rise to talk of acute peritonitis. This was overshadowed, however, by the predominant symptoms referred to upper thigh. X-rays were unable to throw any clear light on the diagnosis.

The first blood count showed only moderate leucocytosis,—9,200 white cells. Urinalysis revealed pus and blood in urine, associated with numerous hyaline and granular casts.

Careful local examination focused the attention upon the upper femur as the site of the trouble. The resistance noted on manipulation of the hip joint could easily have arisen from trouble within the joint, but the presence of an unmistakable tenderness from great trochanter downward indicated to our minds that our attack must be aimed at the upper portion of shaft of femur and not be diverted by attention to the joint. Members of the staff saw the child at this stage and

*Read before the Jefferson County Medical Society, October 3rd, 1922.

made many kindly suggestions, helpful and otherwise.

I was determined in spite of the negative x-ray picture, in spite of the low leucocyte count and even though there might be some symptoms of hip joint envolvement, to open the thigh and explore the shaft of femur.

This was done through a liberal incision along outer surface of thigh, exposing first the trochanter, then about half extent of shaft. A drill quickly penetrated the trochanter to its deepest point, and pus "welled up" out of the drill hole; a second and third drill hole was made below in the shaft, and a slot connecting these made through the cortex, through which pus flowed in liberal quantity. Iodoform packing was inserted in such way as not to interfere with the drainage and the child returned to bed after having been only a very few minutes from first to last in the operating room.

The next morning Dr. Allen reported on the blood culture, stating there was present a hemolytic staphylococus. We had a little discussion with him as to whether or not he meant hemolytic strep, but he stuck to his terminology, and we were not well enough armed to carry the argument too far.

The child reacted well during the next two or three days, temperature receding to 99, F. with a maximum range of about 102, F. until the sixth day following the operation when there was a sudden rise to 104 8-10, F. concurrently followed by a sudden rise in leucocyte count, 15,200, and from that a fluctuant type, ever high, ranging higher until the eleventh day after operation cyanosis developed, with gradual increase in cerebral excitement finally culminating in death on the fourteenth day after entering hospital.

This report is made to stress a few already well accentuated points.

1. The reflex phenomena of osteomyelitis near a joint may be utterly confusing. The men who first observed this patient were impressed with the joint symptoms and treated the child for arthritis, and no fault can be found with them for this. They were competent doctors. Deep pressure over the shaft of the femur caused excruciating pain at the pressed points. This does not occur in a localized hip joint affection.

2. The necessity for early evacuation. The entire clinical picture in this case was that of an organism being ruthlessly "burnt out" by an overwhelming infection conveyed to the uttermost parts in a contaminated blood stream. The focus of the contamination was in the pent up wall of the bone canal. In this case it is hard to conceive of the organism surviving until such time as the limiting bone could have been eroded and the pent up pus have found freedom in the less dense structures. One who had observed several of these "haemolytic" cases, might have thought as we did in advance, of the possibilities that the source of infection was that virulent, hence the urgency of early release of tension, allowing for further adjustments as the constitutional shock is rallied from.

The force and freedom with which the pus flowed as soon as the drill holes were made indicated the enormous tension. There was no limiting membrane or obstruction up or down the medullary cavity. Rapid destruction naturally follows. Release of tension must be effected at the earliest possible moment, no attempt being made at more than this.

DISCUSSIONS

I. A. Arnold: In osteomyelitis early diagnosis and free drainage to afford ample drainage are the most important items if the affected limb is to be saved Thorough evacuation of the pus is essential, and this cannot be accomplished by simply making a drill hole through the cortex. By freely incising the soft tissues and making a wide opening through the cortex adequate drainage is assured. It has been my custom to leave the muscular incision open and pack with gauze.

If operation is performed early, before destruction of bone substance has occurred because of the infective process, recovery may be expected. Where operation is delayed and the infection virulent, as in the case reported by Dr. Trawick, the prognosis is less favorable.

Orville R. Miller: Whenever the treatment of osteomyelitis is being discussed I am reminded that Dr. William C. Dugan used to say in his lectures: "In dealing with osteomyletisis make a large opening in the cortex to provide for ample drainage; operate as soon as possible after the diagnosis has been perfected, and complete the operation quickly; there is no limit to the amount of bone which may be sacrificed just so long as enough of the shaft remains to give it strength."

The case reported is interesting especially in that infection was apparently due to hemolytic staphylococcus. Such cases must be rather unusual. A wide opening in the bone is particularly necessary in such cases to insure free drainage.

It has been my practice to make a long incision through the soft tissues and a wide opening in the bone, leaving possibly not more than one-half of the shaft. The wound is left open and packed with gauze. The dressing is not changed until the end of forty-eight hours. In acute cases,

however, such as reported by Dr. Trawick, the dressing should be changed earlier.

The points to be emphasized in the treatment of osmeomyelitis are early diagnosis, prompt operation, wide incision, and free drainage.

John D. Trawick (closing): In the case reported a liberal opening was made through the shaft of the bone to provide for drainage. The pus was under tremendous tension as shown by the freedom with which it flowed when the first drill hole was made. The operation was performed very quickly. It must be borne in mind that in these tremendously virulent infections, the patient is very ill, and the quicker the operative steps are completed the better.

I had no intention of trying to instruct the members of this society in the treatment of osteomyelitis. The case was reported mainly to emphasize the necessity of early diagnosis, prompt operation, liberal incision, and free drainage.

RUPTURED ECTOPIC GESTATION: OPERATION WITH RECOVERY: CASE REPORT.*

By Charles Farmer, Louisville

I have a specimen which I would like to exhibit although there is nothing especially interesting about it. It was removed ten days ago from a woman aged thirty-nine the mother of two children. The first was born in November, 1919, the second July 5th, 1922. She missed her first menstrual period after the birth of the second child, but menstruated regularly after that until December 12th, when her period was due; there was a slight show of blood at that time on the first day, and three days later there was a slight show of blood; her baby was then five months old. She went down town shopping and while in one of the stores things became dark before her and she had to lie down for a while until arrangements could be made for her to be sent home. They sent for her automobile and she was driven home. I was summoned by telephone and when I reached the house she was almost pulseless and very pale; she was lying on her right side and could not move; pain was so severe in the lower abdominal region that she was given ¼ grain of morphine and sent to the hospital as quickly as possible. By that time her pulse was imperceptible at the wrist. However, the anesthetist said he thought she could be safely anesthetized for operation. Saline solution was prepared and as soon as I was ready to operate intravenous introduction was started. She had received 500 c.c. by the time the operation was completed.

We found a ruptured tubal pregnancy about the isthmus, age estimated at six weeks. The specimen is perfect and is exhibited for your inspection.

The patient had no trouble following the operation and is now about ready to leave the hospital.

DISCUSSION

J. G. Sherrill: Ectopic gestation is always of interest, particularly so just at this time because Burch, of Nashville, Tennessee, at the last meeting of the Southern Surgical Association reported on a new method which has been proposed of collecting the blood in cases of intra-abdominal hemorrhage, accidental or traumatic, and also from ruptured tubal gestation, the blood being collected and then injected into the veins of the patient,—auto-transfusion, so-called. He reported several cases and recommended the procedure in cases of ruptured ectopic gestation.

In the discussion which followed I took the position that auto-transfusion might be of extreme value in case of injury of a very large abdominal vessel, or in injury to the spleen or liver with marked out-pouring of blood, where transfusion could be made immediately and there was no possibility of contamination. I did not believe, however, that auto-transfusion should be employed in cases of ectopic gestation: First, because the mortality in ectopic gestation is comparatively low if operation is performed with celerity and hemorrhage controlled; second, because hemorrhage is easily controlled in ectopic cases and the patient goes along to recovery and makes blood very rapidly.

Some surgeons have recommended in the treatment of ectopic gestation that one wait three or four days and allow the patient to readjust herself. In my opinion this plan markedly increases the clinical risk. Not many of these patients die from immediate hemorrhage, therefore if the surgeon sees them promptly and operates immediately he will save ninety-nine out of every hundred. With that low mortality rate under prompt action I do not believe the mortality can be lessened by auto-transfusion. Therefore I opposed it.

In cases of the type under discussion fragments of clots are certain to be carried into the circulation; the blood does not remain in the abdominal cavity without becoming contaminated by bacteria from the intestinal tract; sometimes abscesses develop if the blood remains long in the abdominal cavity due to bacteria which escape from the intestine. I may be wrong about this, but we know blood retained in the abdominal cavity sometimes becomes infected, and it would not be safe to inject infected blood into the circulation, nor would it be safe to inject blood which had fibrin forming bodies in it and thus cause coagulation in the vessels. Therefore I took the view that auto-transfusion was unsuit-

*Clinical report before the Louisville Medico-Chirurgical Society.

able to cases of ectopic gestation, and I believe this position can be maintained.

It is a strange thing that only within the last fifty or seventy-five years has any great attention been given to ectopic gestation with early rupture. If I am not mistaken the coroner of Philadelphia, Penna., was responsible for the first discussion of this subject. He was impressed by the number of cases of ruptured ectopic gestation that came under his observation and made a detailed report of his findings. Dr. Mordecai Price then made a study of one hundred cases of ruptured tubal pregnancy, and that was the beginning of the treatment and especially the diagnosis of ectopic gestation before rupture. If the diagnosis is made before rupture the chances of recovery are greatly improved, and the picture of ectopic gestation is quite typical. The results in some cases are unfavorable because the physician in attendance does not recognize ectopic gestation, he thinks the patient is having a miscarriage and performs curettment for removal of the supposed debris.

Louis Frank: I think very few patients die from primary hemorrhage due to early rupture of tubal pregnancy. There should be no difficulty in the diagnosis of practically every case of ectopic gestation that has ruptured, especially if rupture has occurred into the abdominal cavity. The diagnosis in these cases can be easily made on the history alone. Not all of them, however, rupture into the abdominal cavity. Rupture may occur and the fetus proceed to full term development either in the abdominal cavity or between the folds of the broad ligament. I think Mordecai Price reported the first classical case of ectopic gestation which had ruptured into the abdominal cavity with development of the fetus to full term and delivery of a living child. The last report I saw, which was ten or fifteen years ago, that individual was still living.

Every patient with ectopic gestation should be operated upon as soon as the diagnosis is made, simply because we cannot always know just where rupture has occurred. If the fetus has not been destroyed, which it usually is following rupture, if the placenta is not completely detached from its bed in the tube, or if rupture has occurred between the folds of the broad ligament, there may be continued fetal development with markedly increased clinical dangers.

My belief is that most of the cases of so-called rupture are not in truth ruptures, but are abortions either complete or incomplete, probably the majority of them incomplete abortions, from the fimbriated end of the Fallopian tube. These furnish some of the most acute and dangerous cases with which we have to deal.

We had the opportunity of operating some years ago upon two patients with ectopic gestation in which there was partial rupture extrusion followed by outgrowth from the fimbriated end of the tube and development of the fetus to full term. Both patients had symptoms simulating those of normal labor, accompanied by discharge of decidua, etc., and death of the fetus. I removed one of these shortly after death had occurred, the other several months after death. Where complete extrusion or death of the fetus does not occur the woman is really subjected to greater dangers than otherwise.

These cases are interesting from many standpoints; from the study of their probably causation; from study of their development; from the histology of the tube and uterus; from the formation of decidua; from study of the place where hemorrhage occurs, etc., but these are questions which cannot be discussed at this time.

The specimen exhibited by Dr. Farmer is a beautiful one and I am glad to have had the privilege of seeing it.

Charles Farmer (Closing): The site of implantation of the impregnated ovum probably has something to do with the time of rupture. The isthmus of the tube does not yield very readily and rupture in that situation is usually early. Tubal abortion occurs most frequently when the fetus is located near the fimbriated extremity of the tube. I believe hemorrhage from rupture near the uterine cornu would be greater than from rupture in any other portion of the tube.

I did not remove all the blood from the abdominal cavity during the operation, but a great many large clots were removed. It is presumed the blood remaining was rapidly absorbed by the peritoneum as no trouble followed the operation. Of course there is danger of infection as Dr. Sherrill has stated. The patient had some elevation of temperature for five days, but during the last four days it has been normal. The next morning after the operation her pulse was 120; it is now 90.

There is no reason to presume that the patient will not fully recover.

Treatment of General Paresis.—Sicard discusses the reasons for the resistance of spirochetes in general paresis, and sees the only way to change it is in drawing the spirochetes from the brain into the general circulation. One of these methods consists in a series of shocks provided by injections of horse serum during the course of arsphenamin treatment. Some good results were obtained by him with this method. Some hopes are attached to his other method: injections of arsphenamin and similar products in an ether narcosis. Possibility of using heroic surgical proceedings is suggested—perhaps craniectomy, to transform the circulation in the brain—because he believes that any therapeutic method which looks sensible is justified in an established general paresis.

CARCINOMA OF THE BREAST.*

By John W. Price, Jr., Louisville

John B. Deaver and Joseph McFarland in the preface to their book, "The Breast, Its Anomalies, Its Diseases, and Their Treatment," say: "The critical examination of the results of any large series of cases cannot but produce a profound impression and lead to the distressing realization of the fact, that we, as a profession, are far from the scientific application of much of the knowledge already at our disposal. Were we properly alive to the situation as it exists today, a death from external cancer would be the exception rather than the rule, and it would be universally recognized and admitted that to temporize with a suspicion of malignant disease is criminal."

I wish to acknowledge my indebtedness to these authors for a most complete bibliography of the subject, and also my gratitude to Dr. Deaver for his many clinics. The first radical operation for cancer of the breast that I saw was performed by Dr. Deaver, and the first operation of this kind in which I assisted was done by Dr. Deaver's brother Harry B. Deaver. The Halsted operation was performed.

The diagnosis of cancer of the breast: It is not proper to occupy your time with an account of the history, symptoms and physical signs of an old tumor, but rather to insist that every tumor of the breast should be removed as soon as possible after its discovery and let the diagnosis be made in the operating room. The diagnosis can be made if cancer is present by the gross appearance in practically every case. If the surgeon doubts his own ability to make a diagnosis, he should have a pathologist present. If he is not prepared to do an immediate radical operation he should not undertake the treatment.

I am anticipating the treatment. Nevertheless the treatment for all operable cases is the radical operation followed by the roentgen ray. The recurrent and metastatic carcinoma of the breast may be treated by excision or cautery and x-ray, or in certain cases by x-ray alone. The inoperable cases of carcinoma of the breast are best treated by x-ray alone. It might be of some interest to review how the present radical operation developed.

According to Deaver (p. 575) the operation developed somewhat as follows: Charles Moore a surgeon of London, in 1867, presented a paper "that described in principle at least, the necessary steps of a radical breast amputation." "Kuster was the first to explore the axilla in every case of mammary carcinoma, and according to Wm. Watson Cheyne, Lord Lister removed the axillary fat and contained glands in every case of mammary carcinoma as early as the late sixties."

Volkman was the first to practice excision of the pectoral muscles but only in those cases where they were "visibly involved by the disease." Halsted was the first to advise complete removal of the pectoral muscles, in every case of carcinoma of the breast, in his article in the Annals of Surgery November 2, 1894.

The Halsted procedure has stood the test of time, and after twenty-eight years is the operation of choice, if we modify the incision and the extent of the skin to be removed and add to it the removal of the upper fascia of external oplique and part of the sneath of the anterior rectus as advised by Handley. If this is done and the edges of the incision are undermined the wound may be closed and the skin grafting advised by Halsted omitted.

It is now generally believed that the greatest hope for a cure of cancer of the breast depends upon its early radical removal followed by x-ray treatment. That the profession of Kentucky believe this, too, is generally accepted. This being so, why do we not scientifically apply this knowledges. Why is it that the average patient who applies to the surgeon for treatment comes when the tumor and glandulaar involvements are so extensive that a cure is impossible? That this is true I can show by the following cases some of which have been treated in private hospitals and the others in the Louisville City Hospital. The list is not complete, it does not contain any of those cases which were inoperable nor a number of others which were operated upon, yet it is sufficient for our purpose.

Case I. A. B., female, colored, aged 49, admitted to Louisville City Hospital, March 1916. She had received a bruise to the right breast three years ago. A nodule formed, became painful, grew slowly, the overlying skin became dimpled and adherent to the nodule. Examination showed a mass the size of a walnut in the inner lower quadrant of the breast, the overlying skin is adherent to the nodule and it is adherent to the underlying fascia. It is firmly fixed in the breast tissue surrounding it. The axillary glands were palpable.

Clinical diagnosis: Carcinoma.

Operation: Radical removal of breast, with pectoral muscles, axillary glands and fat en masse. The wound healed. Microscopical diagnosis: Carcinoma. I am told the patient died at City Hospital five months later of acute appendicitis.

Case II. A. McG., female, colored, aged 62, was admitted to Louisville City Hospital May 1922. Six weeks previous to admission she

*Read before the Jefferson County Medical Society, October 23, 1922.

injured her left breast by bumping into a refrigerator. A mass developed which grew progressively and painfully. Examination showed diffuse infiltration of left breast and enlarged axillary glands. Clinical diagnosis: Chronic mastitis. Operation: Amputation of the breast was done, on account of its gross appearance and the enlarged axillary glands it was decided to make a radical dissection of the axilla removing all glands and fat en masse with both pectoral muscles.

Microscopical diagnosis: Two sections show chronic mastitis and adenoma with second degree hyperplasia—border-line malignancy. Four sections of lymph nodes show no malignancy. Note: Breast probably malignant, more sections will be studied. Study of further sections gave same findings. Postoperative history: Patient returned to work stemming tobacco 2½ months after the operation and is well today.

Case III. M. S., aged 56, female, white, was admitted to Louisville City Hospital, October 5, 1914, and discharged October 31, 1914. Patient first noticed a lump in left breast one year before admission. Examination of left breast showed the superficial veins to be prominent. The nipple is depressed and adherent to a hard infiltrating mass 5 cm. diameter, in the outer side of breast, the left axillary glands are enlarged. Clinical diagnosis: Carcinoma left breast. Treatment radical operation, breast, pectoralis major and minor and axillary glands removed. Microscopical diagnosis: Carcinoma of breast and lymph nodes.

Case IV. M. S., same patient as case III—radical breast amputation in October 1914. In September 1915, a nodule developed to the outer side of the scar of one of the splint sutures. October 1915, nodule was removed with fat and skin. Microscopical diagnosis: Carcinoma. March 1916, another nodule near original incision was removed and x-ray treatment given. January 1917, the patient was living but further history is unknown.

Case V. J. J., aged 74, female, colored, was admitted to Louisville City Hospital October 1916. History: Ten years ago she had a fall and struck right breast on the edge of a table. The breast enlarged. One year ago a swelling developed in the breast, the skin broke and there was discharged a bloody, watery material. Treatment received before admission to the hospital consisted of local applications of liniments and salves. Treatment at hospital: Radical amputation of right breast, pectoral muscles and axillary glands. Diagnosis: Carcinoma. There was some necrosis of the skin and a wide area healed by granulation. This patient was living in June, 1922. Present condition is unknown.

Case VI. C. K., aged 39, female, white, was admitted to Louisville City Hospital in January, 1917. Diagnosis: Recurrent carcinoma in breast. History: In 1914, she said she had noticed a mass in right breast for four months, and that there no appreciable growth. There were no enlarged axillary glands. A surgeon removed the tumor from the breast.

Microscopical diagnosis: Scirrhous carcinoma. Twenty months later another nodule appeared. This nodule, which has been present for five months, is adherent to overlying skin and firmly fixed to the ribs; extensive involvement of axillary glands is present.

Radical operation was considered useless when the ribs were found to be involved. The breast and muscle and overlying skin were removed and the cautery applied to the involved ribs. The patient died nineteen months after the last operation and three years and eight months after the first operation.

Case VII. M. S., aged 55, female, colored was admitted to Louisville City Hospital, in October, 1920. Three months ago a small tumor appeared in right breast which was painful, tender and movable. During the past two months it has grown rapidly. It is not adherent to the skin or fascia and there is no retraction of nipple. Operation: Radical amputation of breast, pectoralis major and minor and axillary tissue removed. The gross appearance of tumor at operation was malignant. Microscopical diagnosis: Scirrous carcinoma of breast with retrograde changes. Metastasis in an axillary nodes. Chronic mastitis. Patient made an uneventful recovery, wound healed by first intention and she had good use of right arm. Present condition is unknown.

Case VIII. Mrs. W. H., aged 50, white, was admitted to Norton Memorial Infirmary in June, 1920. Two years ago she noticed a nodule in the outer upper quadrant of the right breast. For the past nine or ten months she had noticed that the overlying skin was adherent to the nodule and she had had pain in the breast.

Examination shows a hard, irregular nodule in the right breast. The overlying skin was adherent and slightly brown. The nodule did not seem to be adherent to the underlying muscle. The deep axillary glands were enlarged and palpable.

Clinical diagnosis: Scirrhous carcinoma of right breast. Operation: Radical amputation of right breast, pectoralis major and minor, axillary glands and fat.

Microscopical diagnosis: Scirrhous carcinoma of breast. Metastasis found in the

node. The incision healed by first intention and the patient writes that she is very well today, two and a half years after the operation.

Case IX. F. G., was admitted to Louisville City Hospital February, 1915. Diagnosis: inoperable recurrent carcinoma of left breast with bone metastasis. In 1911 or 1912 another surgeon amputated the breast. A recurrent nodule was removed in 1913. The present nodule developed the summer of 1914. The nodule is firmly fixed to a rib and seems a part of it; another nodule in the sternum. X-ray treatment was advised. The further record of the case is unknown, but it is of interest to note that she lived at least 3 or 4 years after simple amputation of the breast.

Case X. L. M., aged 39, female, colored, was admitted to the Louisville City Hospital in November, 1920.

History: A nodule was noticed in the right breast in May, 1920; at that time the overlying skin was adherent and the nipple was retracted. Evidently the tumor had been present for some time unnoticed. It has grown gradually but steadily.

Examination shows the presence of a large tumor in the right breast, with alherent skin and retraction of the nipple. There was the most extensive involvement of the axillary glands in this case that I have ever seen. Metastasis in the chest was suspected, but repeated x-ray examination was unsatisfactory because the patient was very hort and fat, weighing about 200 lbs. She was given the benefit of the doubt and radical amputation of the breast with removal of pectoralis major and minor and axillary glands was performed. Microscopical diagnosis: Carcinoma. I examined the patient several months before she died and there were no superficial recurrences. She died sixteen months after operation in another city and the exact cause of death is unknown.

Case VI. M. M., female, colored, aged 60, admitted to Louisville City Hospital October, 1922. Patient stated she had noticed a nodule in outer lower quadrant of right breast two years ago. She consulted her physician who gave her some pills "to make the mass scatter" and told her to wet the mass. The tumor continued to enlarge. She consulted a second physician and he gave her some medicine without examining the breast. She consulted a third physician, Dr. Hartman, who examined her and made diagnosis of carcinoma and advised her to have the tumor removed immediately. The patient came into the hospital six days later. Examination showed a hard nodule the size of a walnut in the lower anterior quadrant of right breast. The overlying skin was densely adherent and discolored. The mass was firmly fixed in the breast tissue. The axillary glands were palpable. Radical operation was performed October 20, 1922. Diagnosis: Carcinoma.

Case XII. M. C., aged 54, colored, was admitted to Louisville City Hospital September, 1922. In April, 1920, patient noticed small nodule on right breast, located somewhat medially and superiorly. This gave her a great deal of pain for about one year, but grew very little in size. In April, 1921, this tumor was removed by a physician. This gave relief for a few months, but soon began to give her more trouble than before operation. The entire breast began to swell gradually until the time of admission, September 6th, 1921. For about six months before patient entered hospital she began to grow weak and lose some weight. She was confined to bed almost entirely for four weeks before entering hospital.

Radical amputation of the breast was performed by Dr. McKeithen in September. Microscopical diagnosis: Fibro-sarcoma. Lymph nodes average 4 to 10 mm in diameter, purplish gray, and on section appear pale gray and granular, and upon microscopic examination show no evidence of metastasis.

This patient came under my care on October 1, 1922. The wound is granulating. This case is included with the other because it illustrates one of the points I wish to make, namely, the danger to the patient of doing an incomplete operation for a malignant tumor of the breast.

In summarizing the special points in the histories of the cases which have been presented it is interesting to note the following:

The average age of the twelve patients with malignant tumors was 53.9 years.

The sex was female in cases.

The average duration of disease before operation was 13 months.

Glandular involvement was present in 9 cases before operation and in the one case of borderline malignancy.

Recurrence is known to have ensued in only one case where a radical operation was performed by the essayist. The post-operative period was twelve months.

There was recurrence on an average of eight months in three cases where simple excision of the breast or tumor had been performed before the patient came under my care.

One patient (case No. 10,) died sixteen months after operation in another city; cause of death unknown. But there was the most extensive involvement of the axillary glands in this case that I have ever seen. It is probable she died of deep metastasis.

The average post-operative period of patients operated more than two years ago

known to date is four years. This includes those on whom radical operations were performed primarily and those on whom as near a radical operation as possible was performed for recurrence after simple excision by some other surgeon. The present condition of three of the patients is unknown, though one is known to have lived four year after first operation—the second is known to have lived two and one half years after operation—and the third was known to have been living six years after operation.

Another patient died in the City Hospital of acute appendicitis five months after radical operation.

A single patient showing early malignancy applied for treatment. Some applied for treatment for benign conditions. This is the only encouragement that has been received in fourteen years of hospital service.

This experience leads me to suggest that every physician in this community should examine the breasts of every patient without regard to age or complaint for which the patient may apply for relief, and further to advise the immediate removal of all cysts and tumors in the breasts and the removal of all breasts showing chronic cystic mastitis.

If this suggestion is observed certainly many cases of early cancer will be discovered and an opportunity given for the prolongation of life.

I wish to say that the tissues in all the cases reported were examined by Dr. Stuart Graves, and I wish to thank him for his courtesy and co-operation.

DISCUSSION

Stuart Graves: I am glad to take advantage of an opportunity to urge early diagnosis and early operation for cancer. Both the profession and the public should study this question more, although a vast improvement would be made if both would take advantage of the knowledge we already have.

During the last eight years I have examined microscopic sections from hundreds of breast tumors in the majoirty of which the question of malignancy was involved. In this study I have been impressed by the fact that procrastination has cost many lives.

In the Southern Medical Journal of May, 1922, Dr. Irvin Abell and myself reviewed three hundred cases of mammary disease. In one hundred and forty-three, microscopic sections were made and carefully studied. Dr. Abell's attitude toward frozen sections (rush diagnosis) in operations of this type is shown by the fact that, of the one hundred and forty-three cases, he made a rush diagnosis in fifty-six because he was not sure of the condition in that many after his study of the clinical findings. One patient in particular, a female under forty, consulted Dr. Abell because her mother, grandmother and one other blood relative had died of carcinoma and she feared she also had the disease. She apparently had cystic mastitis and her breast was removed under this diagnosis. We were of the opinion malignancy did not exist after gross examination in the operating room. However, after multiple splitting of the entire specimen, further examination revealed a hard nodule the size of a small marble, frozen section of which under the microscope showed unmistakable characteristics of malignancy. Of course Dr. Abell then performed a radical operation, excising the entire breast together with the axillary glands. An interesting point in the history is that the patient returned a few months later for incision of the other breast which had become similarly involved. She has since remained in good health, but I believe she would have died of carcinoma had the procedure outlined not been followed.

In this connection I wish to emphasize the point that the age of the individual should not be regarded too much in making the diagnosis of carcinoma. It has been repeatedly shown that cancer is not a disease of old age. Dr. Young will recall a case of cervical carcinoma we saw in a girl aged nineteen years. The crevix was removed and two or three microscopic examinations were made so there was no question about the correctness of the diagnosis. We have records of a considerable number of cases in which the diagnosis of malignancy was proved by microscopic sections in patients less than thirty-years old and several of them were under twenty-five.

One point mentioned by Dr. Price deserves to be especially emphasized; i. e., if those men who administer "pills to scatter the cancer" would themselves take the pills, people with cancer would be much better off. I recall the case of one young woman seen two years ago who during the previous year had consulted nine different doctors because of a nodule in her breast, and eight of them had advised her to defer operation. She finally reached the hands of a competent surgeon who easily made the diagnosis of carcinoma. Radical operation was performed, but metastasis had occurred. All of you know the gravity of the prognosis. It is a crying shame that doctors who must assume the responibility of educating the people in regard to the dangers of carcinoma should thus procrastinate when they should know it is a matter of life or death to the unfortunate patient.

George S. Coon: About eight months ago a patient with inoperable mammary carcinoma came under my observation; there was a large sloughing mass in the breast and the patient was in bad physical condition, but no glandular enlargement could be detected. Under the circum-

stances the case was considered distinctly inoperable, especially because of the unfavorable physical condition of the patient. Roentgen-ray or radium applications by Dr. Keith resulted in considerable improvement, but the sloughing mass remained and Dr. Keith advised her to have this removed which was done a few days ago. I would like to ask the essayist whether, under such circumstances, it is good treatment to excise the sloughing tumor, or should radiation be continued without resort to surgery, If there is any literature along that line I would like to be advised.

In the diagnosis of carcinoma I cannot agree that the age of the patient should be entirely disregarded. It is true that young individuals do sometimes have cancer and we should always bear this in mind; but age should not be absolutely disregarded as we know the "cancer age" is beyond thirty-five years. While a small proportion of cases occur earlier the majority of them are noted later than this. I am also a little doubtful about the possibility of diagnosing cancer by simple inspection and palpation. Of course if there is a distinct tumor, and if the individual is beyond the cancer age, the surgeon can often make the diagnosis clinically; but the pathologist and the microscopist should always be asked to assist in arriving at a final conclusion. And in this connection I would like to state that, even after due consideration of the history, the clinical symptoms, and all the additional information obtainable by pathologic and microscopic examination, the microscopist sometimes fails to make a correct diagnosis. He is either misled by the microscope, does not get a section from the right area of the tumor, or the neoplastic cells are not sufficiently developed to be detected by the eye. Both the pathologist and the microscopist are prone to call these "borderline" cases; but the important question which the surgeon would like to have answered is: are such tumors actually malignant or non-malignant? I believe the term borderline as used under such circumstances is misnomer. We have the right to know whether the tumor is malignant or benign in character.

D. Y. Keith: In the case mentioned by Dr. Coon the patient showed marked improvement in the interval beginning of roentgen-ray treatment and the operation which he performed last week. When first observed the sloughing breast area was about seven inches in length by three inches in breadth. At operation the mass was half that size. It is true there was some increase in swelling after radiation, but the discharge and sloughing rapidly diminished. The irradiated was onehalf the size of the unaffected breast. No one can foretell what will be the outcome; time alone can determine this. However, we have treated several similar cases, some with the old 120,000 volt, others with the new 200,000 volt machine, and the patients are still living in comfort. Some have passed the three year period.

At the 1922 meeting of the American Radium Society in St. Louis I heard the report of a conference and saw lantern sildes of thirty cases of mammary carcinoma before treatment and six months after treatment in the Memorial Hospital. All had been treated with roentgen-ray and by implantation of radium into the tumor. Six surgeons were asked to give their opinion as to further treatment of these cases. All advised to have them return in six months for observation. Twenty-three of the patients reported at the end of the first six months; all thirty were then living. It was hoped these six men would be able to decide what further steps should be taken; that is, whether it would be better to excise the fibrous tissue resulting from radiation, or let the breast alone. The agreement was finally reached that it would probably be to the best interest of the patients for the present not to remove the breast but have them report again in six months when another conference would be held. In other words, they wish to ascertain at the end of another six months how many patients have died, how many have recurrences, or what has happened to them. That is the only way we are going to reach a definite conclusion as to what should be done after the use of radium or deep roentgen therapy in breast cancer.

The consensus of opinion among roentgenologists of the country is that where there are palpable nodules in the axilla all breast cancers should be rayed before surgery is undertaken. This seems a reasonable view, and if surgeons would follow it I believe they would see fewer metastasis and do less surgery in the axilla. Personally we have seen recurrences and metastasis following operations by practically every leading surgeon of Louisville. There seems to be no difference in the character of work they are doing or the results obtained.

There was some discussion at the St. Louis meeting as to how these cases should be labeled when the patients apply for treatment, and they are now trying to change the nomenclature so as to divide the cases into four classes, viz. (1) those that are operable, without enlarged axillary glands, (2) those that are inoperable, without enlarged axillary glands, (3) those that are operable with axillary involvement, and (4) those that are inoperable with axillary involvement. These distinctions are being made to try and come to some conclusion as to what is going to happen after radiation.

According to my limited experience, patients with mammary carcinoma and enlarged axillary glands—which are always potentially malignant—will be decidedly benefitted by roentgen-ray treatment before surgery is undertaken. If thought

advisable the breast and resulting fibrous tissue may be excisd after radiation without disturbing the axillary contents. The patient will have less edema and freer motion of the arm, and will also probably live longer, if nothing is done in the axilla. We have seen many patients with metastasis and recurrences who regretted having permitted any surgery to be done. In my opinion the order of procedure will shortly be reversed, i. e., breast tumors will be rayed before operation. When this has become the routine measure I am sure better results will be obtained; and statistics will show that patients with axillary gland involvement will be better off without surgery of the axilla. I believe also that patients will live longer and in greater comfort that when the axilla is invaded. To me there is nothing more pitiable than a patient who returns a few months after radical operation with a useless arm from tremendous edema for which nothing can be done.

There should be no controversy between the surgeon and the roentgenologist in the treatment of mammary carcinoma, as many patients require both methods of procedure. The opinion of both surgeon and roentgenologist should be secured before surgery is undertaken and an agreement reached concerning the treatment to be employed. As matters now exist patients do not know what to do, and it should be definitely decided what to say to these unfortunates when they apply for advice. At present patients with breast tumors consult numerous doctors and get as many conflicting opinions. For example, the first physician will advise that no surgery be attempted; the second will recommend that the tumor be immediately removed; the third will suggest that the roentgen-ray be used first and the breast excised later, and so on. When we come to a definite agreement among ourselves as to what is best for the patient, some progress will have been made in the treatment of mammary carcinoma. Is not pre-radiation preferable?

I. A. Arnold: Dr. Keith referred to one feature in connection with mammary carcinoma with which I have been profoundly impressed, that is edema of the arm following radical operation. I was formerly of the opinion that it was necessary to remove the pectoral muscles and everything else that might possibly be involved in the cancerous process.

However, since roentgen-ray treatment has been perfected, and especially considering the favorable results secured by this method, I have ceased to remove the pectoral muscles. I now extirpate all palpable glands between the muscles and remove the entire breast leaving the remainder of the treatment to the roentgenologist.

In my opinion it is by a combination of surgery and roentgen-ray that the best results may be accomplished. My plan is to have possible points of metastasis blocked by the x-ray before operation, and advise radiation afterward. The interval should not be too long between the blocking process and operation—not longer than ten days or two weeks—and roentgen-ray treatment should be applied as soon as possible after operation.

Patients with mammary carcinoma should be seen by both the surgeon and the roentgenologist and they should co-operate with each other. It is in this way only that the best results may be secured.

Frank T. Fort: Dr. Price is to be congratulated on the excellence of his case reports. With the advice and recommendations of such authorities as Deaver, Rodman, Halstead, Kocher and many other concerning the treatment of mammary carcinoma, I think we should give the patient the benefit of the doubt and perform radical operation.

The surgeon can usually make the diagnosis of breast cancer based on the clinical findings. However, we should always seek the aid of the laboratory worker to confirm our opinion. In the majority of instances, even where the laboratory fails to confirm the clinical diagnosis, if the indications are clear I believe we should still give the patient the benefit of the doubt and resort to radical operation. This means that all cancerous areas or those likely to become cancerous must be widely excised, the pectoralis major, pectoralis minor and more often than otherwise the axillary contents.

I think blocking every point of possible metastasis with the roentgen-ray prior to operation is beneficial in the majority of instances. Where ulceration has occurred the Halstead operation is indicated, sacrificing as much of the skin as necessary, and then immediately skin graft. I have seen several Halstead operations performed in Johns-Hopkins Hospital with favorable immediate results; but no one can foretell whether the patients will or will not return later with metastasis or recurrences. I do not believe any mammary carcinoma should be considered cured under five years observation.

J. Paul Keith: A point not clearly outlined in the paper nor by any of those who have thus far discussed it, which I think should be given serious consideration, is the effect produced by pre-operative radiation in the treatment of mammary carcinoma. Where deep roentgen-ray therapy, radium or any form of radiation is used, the lymphatics are not only blocked but a certain amount of endarteritis is produced. Microscopic sections have also shown that the cancer cells are changed in character and undoubtedly many of them killed. It seems to me, therefore, that we should devote more attention to the question of preoperative radiation, thus attacking the cancer cells at a time when we may hope to accomplish the most good. The interval between radiation

and operation should be between ten days and three weeks, and this period should be fixed by surgeon and roentgenologist so the treamtent can be definitely outlined.

It has been stated by some of the speakers that mammary carcinoma is "best treated by surgery and radiation." I would modify this to read "that all such patients should be under constant observation of surgeon and roentgenologist." As an example, I recently reported before this society three cases in which the patients were in the hands of surgeon and roentgenologist; they had all the classical symptoms of mammary carcinoma; they were treated by the roentgenologist with the expectation that the breast would later be excised; but at the end of six months there remained absolutely no sign of the mammary cancer and the surgeon decided not to operate. These patients are well today as we have heard from them quite recently. After the surgeon had noted the results of roentgen-ray treatment he deemed it unnecessary to operate. I believe many more cases of this kind would be found with closer co-operation between surgeon and roentgenologist.

The statement needs no emphasis that the earlier the patient is treatd in the history of the disease, the better will be the ultimate outcome. A very competent surgeon stated quite recently that he believed there was a time in the history of every cancer when the roentgenologist could cure it.

John W. Price (closing): I wish to thank the gentlemen for their liberal discussion of my paper. Answering the question asked by Dr. Coon as to the advisability of surgically removing an ulcerating or sloughing mammary carcinoma: Where there is no metastastic involvement within the chest cavity, I believe it a wise procedure to completely excise the breast, this to be followed by roentgen-ray therapy.

One point I tried to make clear in the paper seems to have been overlooked except by the last speaker, i. e., to secure the best results the surgeon must get cancer cases early. Every breast tumor should be removed as soon as discovered. When this is done we will hear less about metastases and recurrences and more about cures, and that is the point I wish to impress upon general practitioners—send cancer patients to the surgeon early, whether they are charity or pay cases does not matter. I have found no difference in the two types, they all come to us late. I plead with you to send them to us early, not one year or two years after the breast tumor has developed.

As to preoperative radiation: I have taken the position that it is better to radiate after operation for the reason that instances are not unknown where the cancer cells seemed to have been stimulated and the tumor developed more rapidly under influence of roentgen-ray applications. Some time ago Butler made the statement that he had discontinued use of the x-ray than by any other method of treatment. Of course it remains to be determined what the new high voltage machin is going to accomplish. The patient mentioned incidentally in connection with my paper and who died last summer was treated by Cole of New York who is supposed to be an expert. It is true, however, that when the patient came under observation the surgeon pronounced the case inoperable. Death occurred soon after roentgen-ray treatment was instituted. Therefore, to guard against any possible stimulating effect which radiation may have, I think mammary tumors should be excised primarily and roentgen-ray treatment used as a secondary measure. Pfahler, a well known roentgenologist of Philadelphia, advocates radiation immediately after excision and reports excellent results from this method.

I must condemn Dr. Arnold's plan of not removing the pectoralis muscles in operating for mammary carcinoma. In the first place the muscles are frequently involved and no one can possibly remove the axillary contents unless the pectoralis major and minor are divided. The infra and supraclavicular glands, those along the course of the axillary vessels, also along the anterior border of the scapula must be removed. It is now my custom to remove a portion of the latissimus dorsi muscle as recommended by Handley, also a part of the fascia of the external oblique and rectus. It has been shown that lymph channels along the sheathes of the muscles are frequently involved in the cancerous process, and if the fascia is removed the patient has a much better chance for recovery.

Congenital Vaginal Anus.—Camera describes the technic with which he operated on a child of 3 with an opening between the rectum and vagina and complete incontinence of feces. He began by diverting the stools by an artificial anus after thorough purging. The distal bowel was repeatedly flushed from the artificial anus until the water came through clear. Then the coccyx was resected to give ample aaccess to the rectum which showed no signs of a sphincter when opened. The communication with the vagina was sutured and the wall of the vagina reconstructed. Two months later the artificial anus was closed. The new anus is not yet continent but seems to be becoming more continent as time passes. The levator ani muscles have been known to assume the functions of a sphincter (Delbet), and there seems to be a suggestion of this in this case.

THE USE AND ABUSE OF X-RAYS.*

By L. H. Kerr, Louisville

As an explanation of portions of this paper, I desire you to understand that it is not my intention to take the part of a reformer; and be it known to all who hear or read this that I have no commercial or professional ends to meet or ax to grind. Neither will I inflict you with a mass of technical terms, statistics, or try to impress you with a so-called scientific paper. This paper is meant to be a statement of facts as x-ray men understand them and as I have observed in my fourteen years experience, from the old coil, to what I might term the super x-ray machine of today.

My desire is for the average physician who uses x-rays, and is not posted on this special branch, to be able to judge the best for his patients and that he may expect to receive a satisfactory end-result.

In the past x-rays were used as an aid in diagnosis, to confirm diagnoses, and in some instances to show errors in diagnoses. A little later they were used to treat everything from ingrowing toe nails to deep seated malignancies.

A year or afterward a great many of these malignancies and malformations were eliminated from the x-ray field due to three causes: First, disastrous end-results to the patient; second, the same result to the operator, one from direct radiation and the other from direct and indirect radiation, the latter a very serious menace to operators of the new type machine today; third, conscientious operators who, having learned from experience of the disastrous results as well as the most unsatisfactory methods of treating practically all cases with the ray, eliminated all cases except those they knew were benefitted by the proper use of x-rays. Today the cycle is about to begin again, or I should say has started with the same chances for good and bad results as at that time I have above stated. There are also strictly commercial uses as well as abuses of the x-rays that are of no interest to physicians and surgeons.

First, we have fractures, known and suspected, and dislocations of bones. I believe most of the profession realize the importance of raying all suspected fractures and dislocations, and of raying the fracture both before and after reduction. All fractures should be rayed in standard positions, in so far as possible, so the image will appear the same to all who may have occasion to use the plate, and if taken in some other position; notation should be made to that effect. The fluoroscope should never be relied on for diagnosis of fractures.

*Read before the Jefferson County Medical Society, September 11th, 1922.

Second, bone pathology. We can now give a high percentage of correct diagnoses of the different bone changes shown upon films as has been proved by treatment and surgery. Films or plates should be used for this work and never depend on fluoroscopic findings.

Third, localization of foreign bodies in the eye and in other parts of the body. Eye localization is as near perfect as it will ever be; in the majority of cases the body can be localized exactly or to within one millimeter of exactness. To demonstrate that a foreign body is in the eye proper or in the surrounding parts should be within the powers of a novice. Localization of foreign bodies in other parts is more difficult though very accurate with the following aids. Nearest point method, combining the Joy stick with the Dessane fluoroscope, Hertz compass and Blane localizer.

Fourth, urinary tract for calculi and pathology. Stones in this tract are easily shown, especially of the kidneys and urinary bladder. In ureter stones extra-ureter shadows of calcareous bodies above, below and to either side must be eliminated. This is done by opaque catheters and the instilling of opaque solutions such as K. I. or one of the non-irritating silver salts, with stereoscopic films. Kidney position is accurately shown with the ordinary film of the ordinary weight person and also of the heavy ones if compression is used or Bucky diaphragm. By the instilling of the ureters and kidneys many pathological lesions are fairly accurately diagnosed and a great many positive diagnoses are made.

Fifth, gastro-intestinal tract. X-ray examination in functional as well as organic conditions of the greater part of this tract is now a routine procedure in all first class hospitals where the service of an expert devoting his full time can be obtained with very satisfactory results. Large laboratories are next in this line of work, provided the operator does not try to do too many things besides his x-ray specialty, and this of course holds good in all branches of this work. A barium meal plus a clyster, using screen and film is the right procedure in this work.

Sixth, the Chest. Certain pathological conditions of the chest contents are more easily diagnosed by the screen and film than by any other method. Heart, aorta, lungs and diaphragm can be observed. I proved during the influenza pandemic that pneumonia can be diagnosed before some of our country's best clinicians were able to be sure of their clinical findings. The chest should be rayed in every case where there are one or more clinical symptoms of any part of its contents. I wish to say a word here in regard to tuberculosis of the chest. My opinion is

that an x-ray diagnosis of tuberculosis of the chest in a suspected case, with very little clinical data to depend on, is better than a negative one, as my experience is that a great many cases of beginning tuberculosis are overlooked, and I believe it is better to err by making a positive diagnosis than to make a mistake in making a negative one, as the treatment given would be beneficial to the patient whether or not there was an active condition.

Seventh, the Sinuses. Very accurate diagnoses of these parts are made in regard to whether or not they contain pus, though in cases where the lining is mucous membrane and it is engorged, the sinus shadow is of the same density as if it contained pus. A description of the size, number of divisions and location of the frontals is of great assistance to the surgeon. The amount of sclerotic bone in mastoids and their cell area is also a great help before operation.

Eighth, the Teeth. All of us know the advantage of a full set of dental films, and the physicians should not be content with less than a full set, if there are symptoms of focal infection. There are between 75 and 100 different pathological and anatomical conditions where we can help the physician and dentist.

Ninth, the x-rays in dermatology. This is a wonderful field for the x-ray specialist, as there are many different kinds of skin pathology that have been proven in years gone by can be successfully treated by this means.

Abuses. Under this head I feel called upon to deal with a very delicate subject. Abuses are many and varied and I do not believe that I exaggerate when I say that some are criminal. Abuses are like snow balls rolling down hill, they are usually small to start with and grow as they roll along. There is a type of man in the x-ray profession whose sense of justice and professional ethics are so warped by money grabbing that abuses to him simply mean the other fellow. There is another type of operator who with limited knowledge and small experience buys a machine and in a week or so believes he knows all there is to be known about x-rays, and his main object is to get his machine paid for. There is also the expert plate reader, in most cases of very limited experience, whose advice nevertheless has a tendency to influence certain of the profession. I think most mistakes in bone work are honest ones due to lack of knowledge of special anatomy, a great many being made in mistaking epiphyseal structures, sesamoid, and supernumerary bones and congenital malformations for what they are not. Dishonesty in bone work is the exaggeration or belittling of conditions as found, for ulterior reasons; this is bad for both doctor and radiologist, though some appear to "get away" with this kind of work. Mistakes are often made by not adhering to standard positions and by looking for fractures on the screen instead of using plates or films and by not examining far enough above and below the site of a known or suspected fracture. Many minor fractures are overlooked even on good plates and the operator should use a reading glass in the event there is any uncertainty.

The ideal x-ray man should know his business and be able to give his client good readable plates of the case which is presented to him; this is generally as far as he is interested in the case. In the event the doctor or surgeon want information in regard to the condition found and asks for it, he should be able to explain his part of the work intelligently. This does not mean that he is to tell how to treat the patient or to give an oration as to his ability as a bone setter; the chances are that the doctor knows how the work should be done, if not he knows a good orthopedic surgeon. The point that I want to make here is that the x-ray man should stick to his business and give the doctor credit for knowing his.

In regard to bone pathology nearly all abuses connected with it are due to lack of knowledge. Mistakes in localizing foreign bodies in the eye are due to lack of training in this work and to bad technique and are very serious indeed; as such mistakes lead to faulty findings for the opthalmologist and possibly the loss of an eye unnecessarily. Mistakes in diagnoses of the urinary tract are generally due to faulty and incomplete technique. As to films and fluoroscopic findings in the gastro-intestinal tract, some x-ray men are entirely too optimistic as to their ability to see things pathological. In regard to teeth ;"they are getting the very old dickens handed them" from both the medical and dental professions, in fact they are as prominent as are our tonsils and those of our children. I believe it is a good idea for an independent x-ray man to give an opinion on any set of films before permitting the every day occurrence of having all the teeth extracted. All exodontists have x-ay machines as well as crow bars (called elevators) and forceps. I have seen cases where good teeth were extracted without sufficient reason, and on the other hand there are millions of teeth that should be removed.

Superficial and Deep Therapy. Under this heading we have a field where our most wonderful aid is abused to the limit, and in comparison all other mistakes and abuses that I have mentioned fade into insignificance. Here it is that the ethical advertiser demonstrates his ability as a commercial salesman, selling goods of unknown worth, both good and bad.

For example, take a carcinoma of the body of the uterus, one where the clinical diagnosis is correct, a true carcinoma of any type. Can x-rays cure it? Have x-rays cured it? How many cases of your own has it cured? There have been and will be a few to recover from this condition, but now they tell us that practically all can be cured by the use of the new super. monster x-ray machine. I contend that time and expermentation alone will tell whether or not, these theories are correct, and theories they are today. The main thing to reason out in this new theory is what the treatment will do to patients besides curing a few of them. If they survive the bombardment of the deadly Gamma rays without shock, grangene and metastasis, after five years, then I will say that they can be cured and not otherwise. Mind, I say after five years from time of last treatment. The knife will do as well with a great deal less risk, with the old ten inch spark gap ray for post-treatment; this is my choice. If too late to cure, let us relieve the sufferer; this can be done by the old method as well as with the new machine with much less risk of later manifestations of the ray.

There are several x-ray men in this city (permit me to say including myself) who are financially able to own and capable of operating this new monster and we do not do so. Why? My reasons are as follows: this apparatus has not had time to be thoroughly tried as to its ability to cure; it has demonstrated its ability to do serious damage of the most distressing character, even death soon after treatment. I know from long experience in working with x-rays and x-ray apparatus that this machine should be in the hands of true research workers and experimenters only for several years to come or at least enough to see what the end-results of any treatment will be. It most certainly should not be used by any one having the price to purchase and thinks he should have one because the manufacturer has them for sale, Dr. Blank has bought one, or its big easy money. Using this apparatus, the operator, the patient and anyone in surrounding rooms, above and especially below, are not safe, to the contrary notwithstanding the manufacturers say they are. The operator has been protected as well as possible from both primary and secondary radiation. What about your patients. There have been cases of x-ray burn from direct as well as secondary radiation that have developed after three years from time of exposure. What will the direct ray of this machine do, if the technique now advocated and used, to your patient five years from now? Will all operators give the German dose or improvise, while operatings. What opinion will the laity have of all x-rays after hearing of a case of burn five years after treatments. The operators of this monster have no means of determining a dose to be given a certain individual and there is not at the present time (June 16) any instrument that can do this mechanically perfect or as an aid mathematically, for an exact safe dose.

I passed through a time of x-ray treatments a good many years ago, and now see the same condition recurring with things just a little different in the way of new machinery and new theories to make talking points. Weigh well your advice to your patient as your professional standing is at stake and also the welfare of the patient. Do not forget that x-rays, past and present, are most wonderful aids in medicine and surgery, and the adminstering of and the findings from them depend upon the ability, integrity and courtesy of your x-ray man and not upon his display of apparatus or the cost of same.

In casualty work, where the use of x-rays are many, not only of assistance to the person injured and the company's physician, but also as protection to the insurance company, we should always be on the alert for malingerers. My experience has been that the x-ray man can be of great assistance in these cases as I have found that patients of this class will talk more freely to us than to the surgeon. Nearly all insurance companies realize the great benefit they derive from having an independent radiologist do their work in preference to letting their surgeons do it. As several adjusters have talked to me on this subject, I can only form an opinion as to the abuses in this particular line of work. It appears that surgeons doing this class of work ask and receive less for their x-ray services than the x-ray specialist. For several reasons the majority of insurance companies prefer that an expert make them written reports, as a double check on their work, such reports also have more weight before the compensation board.

Your x-ray man should be a practical roentgenologist which means that he should stick to his own line and not assist in operations, give anesthetics or dabble in other specialties with the lame excuse that they are "companion specialties." If that were true we x-ray men would be specialists in all branches where x-rays are used.

DISCUSSION

Oscar Bloch: I have greatly enjoyed Dr. Kerr's paper. The statements he has made are certainly rational and conservative. I agree with him that we should not trust to the fluoroscope

in making the diagnosis of fractures and dislocations.

Dr. Kerr spoke of one feature in connection with the roentgen-ray that is of especial interest to me, viz., the use of the new high voltage machine. I am very doubtful about the benefits to be derived from these high power machines which are now being so extensively advertised.

Frank T. Fort: I do not feel competent to discuss the roentgen-ray from the standpoint of understanding the operation of the machine. I happen to be one of the few who has never possessed an x-ray machine nor do I ever expect to have one. Roentgenology is a specialty within itself, but every surgeon should know something about the interpretation of x-ray plates after they are made. However, when a surgeon thinks he knows all about interpreting x-ray plates or pictures he is badly mistaken.

I think it is problematic whether or not the very long spark gap machine will prove to be more efficacious than the x-ray apparatus which has previously been used. It strikes me that such powerful x-ray currents, unless the machine is operated by a most competent and expert man, are likely to do more harm than good.

I am of the opinion that the fluoroscope can be advantageously used in conjunction with x-ray pictures in the study of certain fractures, also in the correction of certain deformities. For example, in multiple fractures of the small bones of the foot one may make a dozen x-ray plates and each will show the bones more or less out of alignment, especially where two or three of the metatarsal bones are involved. Under the fluoroscope the bones may be manipulated and better adjustment secured. In fractures of the head of the humerus it is oftentimes difficult to correctly interpret the x-ray plate and determine the exact type of the fracture. The fluoroscope is of considerable assistance in such cases.

In roentgen-ray pictures of the sinuses we have to place our trust in the roentgenologist to make the interpretation. In x-ray plates of the mastoid we must trust a great deal to our imagination, or the imagination of the roentgenologist, to outline what is shown on the picture. In certain other cranial lesions interpretation of the x-ray plate is also exceedingly difficult, and I sometimes wonder whether or not the conditions are altogether just what the roentgenologist sometimes traces in the picture.

I agree with what Dr. Kerr has said in his paper, that not everything is yet known about the use of the x-ray, especially the high voltage machines now being advocated. It will take at least five or six years to determine whether a patient has actually been cured of cancer by the use of these x-ray machines. If the patient returns after the expiration of that time and shows no evidence of a recurrence of the disease it may then be said that a cure has been effectd.

H. J. Phillips: Dr. Kerr should be in position to speak intelligently and authoritatively on the subject of roentgenology, as I understand he has devoted all the years of his practice to x-ray work.

His statement that carcinoma of the body of the uterus can never be cured by roentgen-ray treatment is very interesting, in face of the fact that certain prominent roentgenologists have stated that they have been able to cure uterine cancer by x-ray applications. We know that cancer cervix, being readily accessible, can be greatly benefitted by x-ray treatment; but cancer of the body of the body of the uterus, being more inaccessible and more difficult of diagnosis, is not so easily reached and possibly he may be correct in his statementt that such cancers cannot be cured and are not often benefitted by x-ray applications. In other words, this form of treatment gives the doctor and also the patient a false sense of security.

As to the essayists' statement about the twenty inch spark gap high voltage machine: I wish to say this is "all Greek" to me because I have to depend in the main on the opinion and judgment of the roentgenologist for interpretation of x-ray pictures. His statement that the twenty inch spark gap machine is harmful, or that it may be possibly do more harm than good to the patient, is also of interest. I have been told by several roentgenologists that the twenty inch spark gap machine is not only dangerous to the patient being treated, but it may have harmful effect on persons in the story below. If that be true it seems to me that the machine is still in the exprimental stage and it will take several years to develop just what it will do.

I was particularly interested in the list of abuses to which x-ray machines have been subjected. Doubtless we will all agree that there are roentgenologists who try to camouflage and endeavor to make money or capital out of their profession and are thus guilty of abuse along that line; but I always endeavor to refer my x-ray work to a man whom I feel is competent, because I believe that a roentgeonlogist should be a man of integrity and of sterling qualities, one who is expert in his line, a man upon whose opinion we can depend. It is just as important for us to have experienced roentgenologists as it is to have experienced internists, surgeons general practitioners.

V. E. Simpson: I would like to add my statement, as an Internist, to the experience of the profession with roentgenologists and x-ray work.

As a preliminary it may be well to call attention to the claims frequently made during the past two or three years, particularly in discussion

of medical education legislation, that the profession is coming to be over-specialized; that to obtain adequate information from examiuations of patients to justfy diagnostic conclusions patients must be seen by too many doctors; that this entails too great an expense; that too much time is required; that the laity is losing confidence in the so called general practition; and that, finally what is most needed is better development of this same so called general practitioner along diagnostic lines so that he may be able to work independently of any outside help.

I am willing to admit, for the sake of argument that it is possible for the medical profession to reach an extreme in any direction, either in point of enthusiasm or ultra-conservatism: but I am one of those who believe that we will jeopardize the welfare of our patient to the least degree if we rely more upon the opinions of men who are especially trained by virtue of their experience and study and are able to do things which in my judgment average men in the practice of medicine can never hope to thoroughly equip themselves to do. I do not believe my opinion on the interior of the eye and the use of the ophthalmoscope is worth anything; nor do I believe that the opinion of the average doctor on the X-ray of the digestive tract, the respiratory tract, the osseous system, etc., is worth much more. Pictures made by an incompetent roentgenologist will not be good, and his interpretation is likely to be worse. A badly made and incorrectly interpreted x-ray picture is as useless or more useless than for the doctor in charge of the case to undertake to complete the diagnosis without it. I believe that unless work of this kind is done by men who are competent to do it, and competent to interpret what they have done, we had better let them alone. And I personally believe from my contact with men who are doing x-ray work that they are no more prone to be dishonest than the balance of us. It is my observation that there is lamentably large numbers of men in the medical profession who are not unwilling to lend themselves to nefarious methods of earning their livelihood, but this does not apply to the roentgenologist to any greater extent than it does to the internist, the ophthalmologist, the surgeon, the neurologist, or the general practitioner. Neither has it been my experience that the x-ray men are unduly prone to shape conclusions for a diagnosis or suggest treatment. Rather have they been only inclined to interpret what they see and this is their function. And interpretation is the most worth while thing; a technician may be developed in a comparatively short time and turn out good mechanical work. But instrumental technique and skilled developing is not all. How best to get a picture of a desired locality or structure demands an intimate knowledge of anatomy and a knowledge of both anatomy and pathlogy is imperative for helpful interpretation. In my judgment only a doctor can achieve all this and only then after special study and that experience which comes from much doing a certain thing. I am in entire accord with the essayist when he reflects that the roentgenologist should be a roentgenologist only, and not aspire to surgery or medicine or any other practical effort in medical endeavor.

L. H. Kerr (closig): I want to correct the impression of Dr. Phillips. I did not say in my paper that there had never been a case of cancer of the body of the uterus cured by x-ray application. There have been some reported cures by this method of treatment. Many patients are benefitted by x-ray applications although a cure may not result; life is prolonged and clinical symptoms relieved.

No mention was made of radium in my paper: Dr. Phillips is correct that in cancer of the cervix radium is preferable to the x-ray. Radium can be introduced directly into the cervical canal, but the x-ray tube cannot be gotten close enough to be effective and rays controlled as with radium the only difference the character of the rays used being the same.

I agree perfectly with the statement made by Dr. Simpson that there is no more tendency toward dishonesty on part of roentgenologists than any other class of medical practitioners. I believe that the medical profession as a whole is more inclined to be honest than many of the other trades and professions.

A CASE OF BRAIN TUMOR WITH UNUSUAL CLINICAL FINDINGS.*

By Morris Flexner, Louisville

Patient, a male, aged 57, married, first seen July 12, 1920. Complaint at that time was weakness and inertia. Family History: Mother died at 67 of cancer of the breast, and one sister died of tuberculosis at the age of 49. Wife living and well, no children, no miscarriages.

Personal History: Usual childhood infectious including scarlet and typhoid fevers. Made uneventful recoveries from both. Had always had a "weakness in his knees," and as a child had difficulty in kneeling without falling. Habits: Moderate amount of stimulants prior to the age of 20, practically none since. Has smoked all of life, excessively lately, using as many as 14 strong cigars a day. Life had been regular, not working very hard, eating well and taking regular vacations.

Present Illness: Early in May he began feeling weak, about the same as he felt every summer, attributing it to the weather. Had no energy or desire to exert himself. There

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was some difficulty in walking, he felt light headed, and noticed his trouble especially at night. There were no symptoms referable to his heart and lungs, and the gastro-intestinal tract was negative except for slight constipation. There was nocturia at times, of recent development. Four years ago he weighed 196 lbs., present weight 153 lbs.

The positive findings on physical examination were: Patient adult male, well nourished, though some evidence of recent loss in weight. Color good, no cyanosis. Expression of face apathetic, becoming brighter when engaged in conversation. Blood pressure 100-60. Pupils were equal but reacted sluggishly to light, normally to accomodation. Deep reflexes active, knee kicks slightly exaggerated but equal. There was no Romberg at this time; no Babinski. Blood count normal; urine showed a specific gravity of 1030 and a positive test for sugar, otherwise negative. As he was a very large carbohydrate eater, it was thought that this was possibly alimentary. However, it took two days of starvation to get him sugar free, but he soon broke through his dietary restriction, and showed sugar.

Ten days from the original examination the subjective symptoms of weakness persisted, there was unsteadiness of gait, the patient walking with a wide base, and a suggestive Romberg was present. Blood pressure was still low. Blood and spinal fluid Wassermann was done. The spinal fluid was under increased pressure, 8 cells to the cmm, Pandy and Ross Jones tests were both two plus. Blood Wassermann was negative with one antigen and plus-minus with the other. The spinal fluid was doubtful negative with 2 cc. In the presence of the physical and laboratory findings it was thought that the patient was suffering from early cerebro-spinal syphilis, and on close questioning admitted an extra-genital sore which he maintained was non-specific.

On July 29 he was given .3 gms. of neosalvasan, with no ill effects. In a few days he began to eat a little heavier, and testing his own urine noted that he was sugar free. He got back practically to his former diet, without showing sugar. This made us believe that the glycosuria was probably of leutic origin, and strengthened our view as to the probability of lues. On August 5, one week after the injection, the blood Wassermann was negative to both antigens, and on this day he was given .45 gms. of neosalvarsan. Contrary to instructions, he went home and ate a fair lunch and a large dinner that evening. About 10 P. M. he became ill, was slightly irrational, temperature was 100 degrees, and when he attempted to walk was quite unstately, reeling from side to side. He vomited and had a severe headache. In 24 hours he had made a complete recovery and was as before the injection. On August 12th his blood pressure was 116-70, a decided improvement and he felt better, but still weak, but had no dizziness.

Because of his reaction to salvarsan he was afraid of more treatment, and did not return for a few days. His condition at that time was not changed and he requested that our findings and opinion be confirmed and asked that Dr. C. W. Dowden see him in consultation. Dr. Dowden saw him on August 19th and had Dr. Stuart Graves do a lumbar puncture the next day. I am indebted to Dr. Dowden for allowing me to report Dr. Graves' findings. "The Wassermann on the spinal fluid of Mr. H., is negative with 2cc. of fluid with both cholesterinized antigens. The fluid was perfectly clear and under considerable pressure at first. The globulin showed a distinct reaction with magnesium sulphate and considerable precipitate with butyric acid. The cell count was 107 per cubic mm. There were no red cells microscopically. The fluid was taken in three tubes and the last one used for cell count and globulin."

Following this the patient lost ground rapidly. He developed a headache, his gait became much worse, he became flighty with definite delirium at times. Dr. I. Lederman was asked to examine his eye-grounds and reported a fuzzy nerve, a slight papillitis without a real choked disc.

Because of the progression of his trouble the patient was removed to the hospital on August 22. He became very unsteady, practically ataxic, somewhat stuporous, double ptosis appeared, knee kicks were exaggerated, double Babinski present, with increased tonicity in left arm and leg, and ankle clonus on the left. When aroused he complained of pain over the right frontal area. This last train of symptoms developed in 24 hours. He was seen the next day by Dr. S. G. Dabney, who confirmed the eye ground findings, the process having advanced to the stage of early choked disc.

The question of diagnosis and underlying pathology was not absolutely definite at this time. The diagnosis lay between cerebral syphilis, brain tumor and possibly lethargic encephalitis, there being many cases of the latter about at the time. On suggestive spinal fluid, with little enough treatment to "light up" a leutic process of the central nervous system, cast a heavy vote in favor of lues. The course was certainly a very atypical one for a brain tumor. It was decided to push antiluetic treatment for a period to see if we could influence the course to any extent.

He was given mercury intramuscular and iodide by mouth and rectum.

The next morning a definite improvement had taken place. He awakened from his stupor and talked connectedly and intelligently for a short while. Following this he lapsed again into unconsciousness and in the afternoon was still further losing ground, with stertorous breathing of the Cheyne-Stokes type. The eye grounds showed definite choking of the discs, and it was decided to do a subtemporal decompression on the right side. This was done by Drs. Frank, and it was demonstrated that the brain was under considerable pressure. The patient was not benefited by the operation and died the next morning. The brain was removed and sent to Dr. Graves for examination. I report his description and diagnosis in full:

Gross Description: Specimen consists of human brain of apparently normal size and weight. In posterior portion of right supertemporal gyrus is an area about 2cm. in diameter over which pia-arachnoid is broken and in which brain tissue is softened and spotted with red. It is said that this is on the side of the decompression operation. Directly adjacent to posterior portion of longitudinal fissure and covering an area approximately circular and 5cm. in diameter, there is found a rather soft, fairly sharply circumscribed, reddish gray mass occupying posterior portion of marginal gyrus, of angular gyrus and parietal gyrus. It extends to the right 5 cm. and, on section is seen to be 7cm. deep. Over it the dura is closely adherent so that it cannot be separated without tearing away some of sub-adjacent tumor tissue. Tumor is not adherent to falx. On convex surface it bulges about 5 mm. and is smooth. In different planes of sections border of tumor seems sharply defined, but is not encapsulated.

Microscopical Diagnosis: Benign tumor, probably so-called "dural endothelioma."

Final Diagnosis: "Dural endothelioma."

Summary: Patient a male, 57 years old, complaining of weakness. Low blood pressure is found as well as a glycosuria and difficulty in gait. Definite pathology is evident in the spinal fluid, with one borderline Wassermann. Glycosuria disappears after neosalvarsan. Process progresses rapidly to death in about five weeks, with evidence of cerebral involvment appearing only three days before death.

Comment: If one looks for the usual symptoms of brain tumor ordinarily described they will not be found in this case. There was no headache, until after the second lumbar puncture, never any vomiting, and no visual disturbance. The difficulty in gait can probably be explained by pressure on the cerebellum. The glycosuria was also likely of central origin, but its disappearance cannot be easily explained. As this case occurred two years ago, it is interesting to think of some of the things that we would do today, if "up against" a similar condition. Blood sugar examinations and more Wassermann tests might have helped, and I believe the surgical treatment today would have been more radical. I doubt if ventriculograms would have been of much aid.

DISCUSSION

L. W. Frank: I saw the patient mentioned by Dr. Flexner the night before his death at which time he was in a stuporous condition. As Dr. Flexner has stated during the day the man had some Jacksonian movements of the left arm and leg; that was the first evidence that he really had a cortical tumor. Prior to that time he had stupor, which is often noted in intracranial lesions, but the convulsive movements furnished the first evidence of a cortical growth. Probably had we opened the cranium a tumor would have been found at that time, but as the man was unconscious and his condition evidently serious, we thought it better to merely relieve intracranial pressure by a decompression operation which was accordingly done.

Frazier some time ago in reporting a large series of cerebral lesions states that not infrequently in tumor cases the first evidence is convulsive (Jacksonian) movements. To my mind the classical symptoms of headache, vomiting and choked disc are in large measure due to internal hydrocephalus with obstruction to ventricular drainage. I have seen instances where tumors occupied a large part of the cranial cavity, but there was no obstruction to ventricular drainage and choked disc did not develop until late in the course of the disease.

While we were almost certain this man had a crebral tumor the classical symptoms of headache and vomiting did not develop until a short time before death occurred.

Several months ago I exhibited before this society a brain tumor (glioma) removed from a boy aged thirteen years. The first operation was performed in December and no tumor found. The diagnosis of cerebral tumor was based on the fact that he had convulsive movements beginning in the lower leg and later extending to the arm showing typical progression of the disease. He had no choked disc, vomiting nor headache. Although we found no tumor at the first operation we felt certain one was present and subsequent events proved this to be true. Twelve weeks later the boy returned; convulsive movements were then much more marked and he presented all the classical symptoms of cerebral tumor. A second operation was performed and the growth successfully extirpated. Improvement was

prompt and the patient has since enjoyed freedom from symptoms.

I believe in cases of brain tumor, even in late stages such as the case reported by Dr. Flexner, it is better to take the chance of removing the tumor rather than to simply perform a decompression operation. While it takes longer to do a flap operation than a simple decompression, yet if the tumor is near the surface and is removed the patient has a better chance of improvement than if the growth is left in situ. Of course subtemporal decompression affords some relief but it is merely temporary.

In the case of the boy I have mentioned there was considerable herniation of the brain when the dura was opened which indicated marked increase in intracranial pressure. In cases of that kind I believe it is always wise to make ventricular puncture. This allows the brain to assume its normal position and with the dura opened the procedure is not difficult because one can see just where to introduce the needle. After intracranial pressure has been reduced by removal of the fluid there is less herniation of the brain and replacement of the flap is greatly facilitated. Closure is sometimes quite difficult after the ordinary decompression operation especially where there is much herniation of the brain.

SOME PHYSIOLOGY OF THE INTERNAL SECRETIONS.*

By J. H. Hohnsted, Ft. Thomas

An attempt has been made of the classifications of the ductless glands according to their physiological actions.

They are first divided into the catabolic and anabolic, or in other words those that tear down and those that build up, and as yet this division cannot be carried out for the totality of the ductless glands.

They may also be divided into those producing acceleratory and those producing retarding hormones. The hormones of the thyroid may be regarded with a full right as acceleratory as catabolic.

As far as we know its actions it quickens metabolism and increases excitability and as proof of this the absence of the thyroid in early youth, inhibits growth and assimilation.

Also the posterior lobe of the hypophysis belong to this group. At least we must regard the actions of the pituitrin derived from the posterior lobe as pronouncedly catabolic. To this group we oppose the glands that have anabolic or retardative action upon metabolism.

To this group belong the pancreatic insular apparatus, the para-thyroid glands, and the anterior lobe of the hypothosis.

I might express the opinion that the generative glands on the contrary belong to the catabolic group, as is illustrated in the inhibitions of growth that occur after the removal of the generative glands. The thymus gland probably belongs to the anabolic.

There is a distinct relationship between the ductless glands and the central nervous system. Very significant is the influence of the ductless glands on the physical and mental functions. I refer to the alteration in character that is almost always associated with Basedows disease, to the psychical irritability, the inclination to restlessness, and nervous inpulses in patient suffering from hyperthyroidism.

And in the patient suffering from myxoedema find just the opposite. We have apathy and lack of interest and the characteristic mental quiet.

The feeling of mental want and strength in patient suffering with Addison's disease, and the depressive attitude of the tetany patient, and finally the profound influence which the ripening of the sexual glands at the time of puberty has upon the body and mentality of the individual.

I shall devote the remainder of this paper to some of the physiological properties of the adrenals.

As you know the supra-renals or adrenal glands are two small glands situated just above the kiduey on each side and not much larger than a good size navy bean. Not only do the adrenals produce the blood pressure raising substance, but the secretion of these organs alone possess the property of arresting these symptoms.

While removal of the adrenals is followed by a great fall in blood pressure and a very feeble and rapid heart action intravenous injection of supra-renal extract invariably causes a marked increase in blood pressure and an equally marked slowing in the heart beat. It is one of the best therapeutic agents in our possession for the combatting of surgical shock.

The adrenal extract exercises a stimulating action upon the heart muscle irrespective of any action upon the inhibitory centers. Not only is adrenalin a powerful vasoconstrictor as you have seen but it is undoubtedly the secretion in the blood stream that gives the oxygen carrying power to the red blood capuscle. The secretion of the adrenals has a marked affinity for oxygen.

On reaching the air cells the adrenal secretion absorbs oxygen and becomes a constituent of hemolobin and of the red blood corpuscles.

The red blood corpuscles after absorbing the oxygenated adrenal secretion yield it to

*Read before the Campbell-Kenton County Medical Society, Newport.

the blood-plasma the forms of droplets, the so called blood platelets.

In its relation to general diseases the identity of the adrenals as the controlling agents of oxidation accounts for the ubiquitious symptoms of fever. Indeed if the modern doctrine that fever up to a certain limit is the outward expression of an auto protective mechanism or immunizing process is sound, and the bulk of evidence strongly sustains this view—the adrenals as a directed factor in fever become also a directed factor in protecting the body against disease.

Their role in the economy thus assumes noble proportion in the extreme, since by their influence on tissue oxidation they sustain life, while through their participation in immunity they defend life.

Addison's disease may be due as is well known to tuberculosis, cancer, cirrhosis, and other organic disorders which may affect the adrenals, or to pathological changes in the solar-plexus and semi-lunar ganglion.

Many other disorders, the pathogenesis of which is obscure and the treatment of which is unsatisfactory mainly owing to the fact that the adrenals are overlooked. That organs fulfilling such important duties to the organism as the above should be governed by some nerve center almost imposes itself when we consider that many of the functions of relative minor importanee are supplied with one.

The governing center of the adrenals is undoubtedly located in the pituitary body. The pituitary like the adrenals influences general oxidation and the temperature and also general metabolism and nutrition.

Another suggestive fact attesting the pituitary adrenalin parallism is that the pituitary in keeping with the adrenals gives rise to glycosuria.

Now the influence of the pituitary over glycosuria is quite marked. Glyeosuria is quite often one of the symptoms of tumor at the base of the brain. There is no doubt but what the pituitary is connected to the adrenals through some direct fibers from the sympathetic.

The pituitary adrenal path leaves the spinal aid through the upper four or five small communication to enter the sympathetic chain and then the great splanchnic, which through the intermediary of the semilunar ganglia, supplies nerves to the adrenals. The pituitary is then conneeted with the adrenals by direct nerve paths, and it thus governs through the adrenals general oxidation, metabolism and nutrition.

Hypo-adrenia or insufficienery of the adrenal secretion. Funetional hypo-adrenia is the symptom complex of deficient aetivity of the adrenals, due to inadequate development, exhaustion by fatigne, senile degeneration or any other factor whieh without provoking any organic lesions in the organ of the nerve path is capable of reducing their secretory activity.

Asthenia, sensitiveness to eold, and eold extremities hypotension, a weak heart action and pulse, anorexia, anaemia, slow metabolism, constipation and psychasthenia are the main symptoms of this condition.

The field covered by functional hypo-adrenia is necessarily a vast one since it includes the asthenias of infancy, childhood and adult life attributed to weakness and exhaustion and often neurasthenia which can not be traeed to any tangible cause.

Addison's disease is classified as chronic progressive hypo-adrenia. We may have between the functional and the organic type just mentioned all different grades of hypo-adrenia, and we have in different degrees the various symptoms of subnormal temperature, coldness, and dyspnea. Weak heart aetion, dizziness emaciation, anorexia vomiting, diarrhea and different grades of bronzing. The remedy in the functional type is arsenic combined with thyroid and adrenaline.

INFANT FEEDING.*

By Thomas J. Glenn, Covington

The subject of infant feeding allotted to me this evening is surely a large one. How to cover such a subject and make it interesting is difficult. To lay down hard and fast rules by which all infants must be fed is impossible. Consequently I will endeavor during the course of my paper to map out in a simple way the general outline of the ordinary feeding case pointing out some of the pitfalls and dangers along the way.

Infant feeding has been placed upon a more or less scientific basis during the last few years. From the number of articles written on the subject and the different teachings we are gradually emerging from a maze of questionable advice to the light of scientific deductions—and the nearer we approach to the light the simpler our feeding rules become.

Breast Feeding

By all odds the best food for the baby is mother's milk. But as we all know too many mother's for some reason or other are unable to nurse their babies—others and they are not a few do not know how to get the maximum results from their breasts; as a result of which the breasts in time quit secreting, or secrete so little that the baby is put upon artificial feeding.

Rules for breast feeding. The baby should

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be put to the breast regularly every three hours during the day and once at night, at 6 a. m. 9-12-3-6-9 and 2 a. m. Putting the baby to the breast regularly develops in him regular habits—he will get hungry if permitted to go the 3 hours and will completely empty the breast at each feeding.

Thorough emptying of the breast at each feeding (aside from the mother's diet) is the best stimulant to keep the breasts secreting well. Sedgewick claims nearly 100% of nursing mothers among his clientele that is he believes that every mother ought to be able to and can nurse her baby if she sees to it that the breast is emptied at each nursing. This statement of course presuppose a healthy mother.

Galactagogues are disappointing in their results—a good wholesome diet. Rest—abstinence from worry and freedom from constipation are the essentials for good milk production—as far as the breasts themselves are concerned as stated before regularity of nursing periods and completely emptying the breast at each feeding (by manual massage if necessary) are the important things. If the baby at a nursing takes only ½ the milk in the breast the remainder must be expressed by manual manipulation. Breasts not thoroughly emptied at each feeding soon begin to secrete less and in time quit altogether.

Mother's Diet. Very frequently mothers are advised to abstain from articles of diet to which they are accustomed and which they like, because they are told that such things cause the baby to have colic. Frequently we see mothers on a very restricted diet—certainly one which is neither conducive to their own well being nor to the production of a sufficient quantity of wholesome milk. Most authorities I think feel that the nursing mother ought to be allowed to eat whatever she desires.

Weekly Weighing. The nursing baby should be weighed every week to determine how he is thriving. This is very important but it is sadly neglected not only by the mother who is nursing her baby but also by the mother who is feeding her baby on artificial food. The scales tell us better than anything else just how well the baby is progressing. Some babies will gain from 6-8 ounces a week—but are satisfied with a gain of 4 ounces weekly. We can too determine with the scales just how much the baby is getting at a feeding by weighing before and after the feeding. Chemical examination of breast milk is rather unsatisfactory and I think is falling into disuse. Breast milk varies from day to day in chemical composition consequently a milk which comes up to per cent requirements today may fall way below tomorrow. A milk showing a poor chemical examination but on which the baby will gain 6 ounces a week must be used in spite of the chemical report and vice versa a milk showing a fairly good report without a gain in the baby's weight may need complemental or supplemental assistance.

Diminished milk supply when it has been determined in any case that the baby is not making the proper gain in weight our first step is to put it on complemental feeding—that is the giving of the bottle of artificial food immediately following the breast. In cases where the mother is required to be away from home for long periods during the day on account of work and etc., we use the supplemental feeding substituting an entire breast feeding by the bottle. With a lagging milk supply the complemental feeding takes precedence over the supplemental because we can very frequently in the complemental method reestablished a good milk supply often times after just a few weeks of the complementary assistance.

Reasons for premature weaning. One of the most frequent reasons we hear for taking the baby off the breast is that the breast milk did not agree with the baby. This we frequently find is faulty for two chief reasons the pain and colic which the mother complains of is not a proof that the milk is not agreeing for we all know that babies can thrive in spite of the colic. Secondly, we find in the majority of these cases that the mother has never used the scales to determine whether or not the baby was gaining in weight. A safe rule to follow is "never take the baby off the breast without observing its weight for at least a week." Very often mothers tell us their babies are not thriving yet the scales will show a weekly gain of from 4 to 6 ounces.

A statement we very frequently hear is "my baby cried all the time," and old Mrs. Smith said that he was not getting enough to eat and advised me to wean him and put him on condensed milk—after a week of condensed milk I put him on Horlick's or Mellins, etc. Thus they go through the category of infant foods, the child all the time is growing worse and presenting a sorry looking picture when finally the mother decides it is best to see a doctor.

Grulee in the introduction to his work on infant feeding states that approximately ¼ of all deaths occur during the first year of life and that of these deaths 60% are due to gastro-intestinal disturbances. When we remember these figures we begin to realize how important it is to keep the baby on the breast for it is common knowledge that diarrheal disease are much less frequent and respond to

treatment better in the breast fed baby than in the bottle fed baby.

In some of the larger cities breast milk is collected by babies' milk associations and sold to difficult feeding cases. In Cincinnati such milk can be obtained for 25 cents an ounce. Three dollars per quart for breast milk gives us an idea of the value placed upon breast milk by pediatricians in the handling of difficult feeding cases. Even at this price there is no profit. It is purely a humanitarian work.

Too many men take the baby off the breast for trivial reasons. At the present time I have under observation 5 such cases where the baby was weaned for insufficient reasons. These babies were placed upon the various infant foods but did not thrive. By diligent and persistent effort on the part of mother and nurse these babies were returned to the breast, complemental bottle feeding was added for awhile—and in the five cases the breast milk was reestablished (in one case after the breasts had been dry for three weeks) and in four of the cases the complemental feeding has been entirely discontinued and the babies are now thriving on the breast alone. In some cases especially premature babies it is very difficult to get the baby to take the breast. Persistent, patient and prolonged effort is required on the part of mother and nurse in such cases. Do not give up. In some of these cases it may be necessary to pump the milk and feed with bottle or spoon.

In another series of 5 cases babies were weaned on account of vomiting—other foods were tried and still the babies vomited. Thorough physical examination later, revealed in two of these cases pylorospasm and in three hypertrophic stenosis of the pylorus, one of which came to operation. If such conditions had been kept in mind in the beginning and proper means instituted to arrive at a diagnosis such babies would not have been weaned but would have been treated for the stenosis. In all such cases coming to operation all authorities agree that the baby who can have breast milk after operation will do better than the one artificially fed.

The wet nurse. In any discussion concerning the wet nurse we must always exclude tuberculosis and lues, before permitting her to assume her role as wet nurse. Personally I feel that we could secure more wet nurses if we made more diligent effort to do so. In almost any neighborhood we can find nursing mothers, who have an abundance of milk and who are willing to give some of this supply to a neighbor's baby. Difference in ages between the wet nurse's baby and the other makes no difference. If the wet nurse's baby is thriving properly that is sufficient proof that her milk is O. K.

Artificial Feeding. The best substitute for mother's milk is fresh cow's milk properly modified. In a large series of cases modified cow's milk will come nearer answering the baby's requirements than any of the artificial foods. In the past one of the great difficulties about the modified milk has been the large number of formulas to be remembered e. g. the per cent cream method The simpler the method the better the results. The following is one of the simplest methods and will answer in the large majority of cases. In this method several things only are to be remembered, the formula itself is worked out in each individual case depending upon the weight and age of the baby.

First. We must know the baby's weight.

Second. We allow 50 calories per pound of body weight.

Third. Under 10 pounds weight allow 1 ounce sugar—over 10 pounds 1½ ounces sugar.

Fourth. Under 3 months allow 7 feedings in 24 hours, from 3-6 months, 6 feeding or over 6 months 5 feedings.

Remembering these few rules we can in a very short time figure a diet for any bottle baby at any age.

Example: Baby 11 pounds weight, 3 months of age, no vomiting, good appetite, bowels moving twice a day.

11 pounds weight x 50 calories per pound 550 calories the baby needs. Child over 10 pounds needs 1½ ounces of sugar—1½ ounces sugar, 180 calories—180 from 550, 370 calories to be supplied by the milk. One ounce of whole milk, 20 calories. Such child needs 18 ounces milk. The amount of water is determined by the number of feedings in 24 hours and the amount of fluid given at each feeding.

A three months child needs about 5 ounces at feeding and gets 6 such feedings a day. 30 ounces, 18 ounces of this we have found is milk remaining 12 is water.

So that complete formula would be for the 24 hours, 10 ounces milk, 12 ounces water 1½ ounces of sugar divided into 6, 5 ounce feedings.

On hearing this for the first time it may seem complicated but after a few trials one will be able to figure it automatically. It certainly is considerably less complicated than trying to remember page after page of per cent cream calculations. Furthermore as stated elsewhere this formula answers the babies caloric requirements and takes care of the ordinary feeding case as we see it.

Boiled Milk. Milk should not be given raw to very young infants at any time, nor to older infants during the heated time. The boiling of milk for 3 minutes makes the protein more digestible and kills the harmful bacteria. The

objection to boiling viz, 1st that the vitamines are killed is probably not true, if the boiling is done in a narrow pan—experiments have shown the boiling in such a way is not harmful—on the other hand boiling in a wide pan gives more chance for oxidation and consequent destruction of the vitamines. Another objection to boiling the milk is that it produces constipation. Such is true but can be taken care of by the administration of sugar and orange juice.

Sugar is added to any modification of cow's milk in order to make up the difference in per cent of sugar between diluted cow's milk and breast milk. Ordinarily cane sugar answers as well as any other sugar. Two level tablespoons equals 1 oz. by weight and will yield 120 calories. Some babies can't take cane sugar. In these cases Dextri Maltose can be used. Four level tablespoons of Dextri Maltose equals 1 oz. and yields 120 calories. Where babies cannot take sugar in any form carbohydrates in the form of barley paste or cream of wheat can be added to the diet early in life.

Fruit Juices. Since the advent of the almost universal boiling of baby's milk orange juice or prune juice is added at about the seventh or eighth week of life. Begin with 1 gram and work up to 3 ounces of either the orange or prune juices. The fruit juices supply vitamines and also act as laxatives.

Artificial Baby Foods. To intelligently use the different artificial foods on the market one ought to know something about their composition and in what particular kind of case each should be used. In a starch diarrhea to change from condensed milk to Horlick's add fuel to the flame and shows a lack of knowledge of the various principles of infant feeding.

Facts which determine how the food is agreeing with the baby. In any method of feeding it is important to know how often the baby's bowels are moving—the character and color of the stool—the presence or absence of curds etc., whether or not the baby is taking all the food offered. It is wasteful to fix more food than the baby will take, also we get a false impression of the number of calories the baby is getting if he does not take all of his food. A satisfied baby usually sleeps well hence we inquire about baby's sleep. A baby likewise on the proper formula will have from two to three bowel movements daily without the use of cathartics. Consistent giving of cathartics to infants does harm in that it accustoms the bowel to depend on artificial aid for their proper function.

Dryco. Of the many artificial foods on the market Dryco seems at the present to enjoy the greatest popularity. It is made by drying whole milk over heated revolving cylinders. The dry powder is then scraped off the cylinders and packed in cans. Just what happens to the vitamines in the preparation of Dryco is questionable. Certainly in its use orange juice should be started early and continued during the entire time the Dryco is used. Dryco is prepared by the addition of boiled water, stirring while adding—after thorough mixing it must be strained before feeding. A level tablespoon of Dryco equals 16 calories. Sugar can be added to the Dryco as the baby's needs require. The chief field for Dryco seems to me to be the premature infant and the infant who does not thrive on the raw cow's milk.

Powdered protein milk, has had extensive use in the correction of the frequent green acid, explosive stools due to the action of the fermentative bacteria on the carbo-hydrates and fat. It is however not in this connection that we wish to consider it here but rather as a prophylactic or complemental food in the feeding of infants. Protein milk is made according to the Eweiss milch formula. To 1 quart of certified milk 3 grams of essence of pepsin is added, after standing at room temperature for ½ hour the curd is separated and to the curd is added 1 pint of lactic acid buttermilk and 1 pint water. It is difficult and time consuming to make this in the home. At the present time this is unnecessary for there are on the market a number of protein milks made according to above formula—dried and placed in cans. At time of using it is simply added to warm water, mixed and poured through a fine sieve. Carbohydrates may be added as occasion demands. The chief value of protein milk consists in the large amount of casein and lactic acid it contained plus its low concentration of carbohydrate and whey salts. This combination makes it an unsuitable media for the growth of fermentative bacteria. Full strength protein milk is made by adding 3½ tablespoons of the powder to 11 ounces of water, 1 ounce of the mixture equalling 11 colories.

Fermented milks. During trying periods in difficult feeding cases where there is intolerance for carbohydrates and for sweet milk in any modification we get gratifying results with fermented milk. This can be made by adding one lactone tablet (P. D. A.) to 1 quart milk and allowing to stand at 90 degrees for 24 hours, or a liquid culture of lactic acid bacilli such as the Bulgaria bacilli is added to 1 quart of milk and allowed to stand for 8 hours at 85 degrees. The next day a portion of this is put into another quart of milk and so on. Young babies take this nicely, older children may require the addition of saccharine. The advantages of fermented

milk are its low fat content and its percentage of lactic acid.

Illustrative case showing use of Bulgarian milk.

J. L. Born October 15, 1922, weight 7½ pounds. Breast fed for 3 weeks. Then mother was advised to wean baby—was put on condensed milk the modified cow's milk, then Nestle's food. Did only fairly well, when 3 months of age weighed 8½ pounds. At 3 months developed broncho pneumonia, on March 10th (age 5 months) had diarrhea lasting 10 days.

Various methods of treatment were tried including starvation and drugs. Protein milk, hypodermoclysis, enterocylsis and salt water into peritoneal cavity, etc., but the child kept losing and was reduced to a mere skeleton (weight 6 pounds 4 ounces, age of 5 months). At this time March 20th he was put on Bulgaria milk 4 ounces of 4 daily—almost immediately the stools became less frefrequent and after a few days returned to a normal color and consistency. The child has continued to gain; at present after 1 month of Bulgaria milk and barley water and Dextri Maltose he weighs 9½ pounds. This was one of the worst feeding cases I have ever seen and I am convinced that the Bulgaria milk by changing the reaction of stool and limiting the action of the fermentative bacteria saved the infant's life.

In conclusion let us remember that infant feeding at present is not a hit and miss sort of affair, but that if followed along fairly scientific lines. To tell a mother to get a can of condensed milk and follow the directions on the can won't do at the present time. Mothers know better—they know that better advice can be had. As one woman said to me recently I know that doctor didn't know anything about such a food for he told me to follow directions on can and there were no directions on the can. We ought to learn well a few methods of feeding, and stick to these rather than dealing with a large number of foods about which we know little or nothing.

Experimental Research on Snake Bites.—Bolognesi experimented on rabbits with snake venom, either by direct bite from the reptile or through inoculation in the hind legs. He states that the aim of his study was to attract attention to the local histopathologic findings, which, he says, have not yet been described on the basis of systematic experimental research. The lesions explain the local clinical syndrome of patients bitten by venomous reptiles. He remarks that Phisalix has studied mainly the effect of snake venom on the nervous system, the heart and circulation, respiration, blood and temperature, while Houssay and Sordelli have devoted attention mainly to the coagulation of the blood.

BOOK REVIEW

Text Book of Pediatrics, edited by E. Feer, M. D. First American edition translated and edited by Julius Parker Sedgwick, B. S., M. D. Professor of Pediatrics, University of Minnesota Medical School and Carl Ahrendt Scherer, M. D., F. A. C. P., Duluth, Minnesota. The various sections revised and edited, with numerous additions, by R. E. Scammon, Minneapolis; J. H. Hess, Chicago; L. R. DeBuys, New Orleans; B. R. Hoobler, Detroit; A. H. Byfield, Iowa City; N. O. Pearce, Minneapolis; M. D. Ott, Minneapolis; Jos. Brennemann, Chicago; W. H. O. Hoffman, Chicago; H. A. Calhoun, Iowa City; E. C. Fleischner, San Francisco; H. Dietrich, Los Angeles; P. C. Jeans, St. Louis; H. G. Irvine, Minneapolis; K. F. Meyer, San Francisco. Octavo. 1100 pages. 236 illustrations and 24 in color. Cloth, $8.50.

J. B. Lippincott company, London: Since 1875, 16 John St., Adelphi. Philadelphia: Since 1792, East Washington Square. Montreal: Since 1897, Unity Building.

Pediatrics is no longer a subject in which one author can have complete knowledge of all branches. Therefore, this work is by a number of the most prominent pediatrists who were competent to write on the special subjects to them. The work of these associates and the new method of presenting the subject in this volume with its numerous apt illustrations justify its production.

Special pains were taken to give full space to those diseases of childhood that are barely touched upon in general texts, but are of great importance to the pediatrist.

More space than is customary is devoted to early infancy. The disturbances of nutrition are discussed by the most able authors in accordance with most recent research. The discussion of the disturbance of nutrition is based upon the study of the nutritional processes in the light of functional tests. These have led to a new classification and a more rational treatment. The older classification, though simple, is actually of little value as far as treatment is concerned.

Special pains have been taken to enlarge upon the therapy. Noeggerath has completely revised the section on genito-urinary diseases, bringing out the advances made during the last few years in the study of nephropathies.

Nursing and Nursing Education in the United States, conducted under the supervision of Representative Medical and Nursing Educators as follows:

Committee is composed of C. E. A. Winslow, Dr. P. H., New Haven, Chairman; Josephine Goldmark, Secretary; Mary Beard, R. N., Boston; H. M. Biggs, M. D., New York; S. Lillian Clayton, R. N., Philadelphia; Lewis A. Conner, M.

D., New York; David L. Edsall, M. D., Boston; Livingston Farrand, M. D., Washington, D. C.; Annie W. Goodrich, R. N., New York, L. Emmett Holt, M. D., New York; Julia C. Lathrop, Washing, D. C.; Mrs. Mrs. John Lowman, Cleveland; M. Adelaide Nutting, R. N., New York; C. G. Parnall, M. D., Ann Arbor; Thomas W. Salmon, M. D., New York; Winford H. Smith, M. D., Baltimore; E. G. Stillman, M. D., New York; Lillian D. Wald, R. N., New York; W. H. Welch, M. D., Baltimore; Helen Wood, R. N., St. Louis. The MacMillan Company, publishers, New York. Price $2.00.

How we Resist Disease, an Introduction to Immunity, by Jean Broadhurst, Ph. D., assistant Professor of Biology, Teachers College, Columbia University, 138 illustrations and 4 color plates. J. B. Lippincott Company, publishers, Philadelphia. Price $2.50.

The most successful attempt yet made to cover briefly the almost limitless field of immunity. It is planned to meet the needs of beginners, more particularly nurses and general college students who have time but for a simple brief course in bacteriology. The glossary defining over one hundred of the more technical terms insures the usability of the volume by the intelligent layman. There are one hundred and forty-two illustrations of unusually wide range and interest. The preventive as well as the curative phases of resisting disease are covered under three divisions—(1) antiserums (and antitoxins), (2) the various types of vaccines, (3) tests of an individual's susceptibility or resistance. This is the only work presenting briefly—in ten lessons—the various phases of immunity: antiserums, vaccines, anaphylaxis. It also covers five other lessons of the model curriculum for nurses, in bacteriology, serum therapy, etc.

Each chapter begins with a tabulated outline, presenting to the student at a glance the main topics included in each chapter and the interrelationships of those topics.

Study suggestions are given at the end of each chapter, with memory or review questions.

This book is an introduction—a simplified text on immunity and not merely an abbreviated one.

The Heart in Modern Practice, Diagnosis and Treatment by William Duncan Reid, A. B., M. D. Chief of Heart Clinic at the Boston Dispensary, Junior Assistant visiting physician and member of the heart service at the Boston City Hospital, formerly assistant visiting Physician to out-patients at the Massachusetts General Hospital. 32 illustrations. J. B. Lippincott Company, Philadelphia and London.

This book incorporates the best of the new knowledge with that which may be said to have stood the test of time and is brief enough to be attractive to those whose opportunity to read upon a single aspect of medicine is limited.

It is uniquely arranged to present heart disease according to its etiologic types, rather than by anatomical lesions which may be common to various types of heart affections. The new classification is from an etiological, a functional, and a structural viewpoint.

The action of syphilis on the heart is described in a single chapter, instead of in one place for aortic insufficiency, in another for the myocardial changes, etc., thus bringing together all of the data pertaining to one subject in one place.

Bedside diagnosis—in so far as it can be made in the cardiac arrhythmias is fully described.

Functional ability of the heart is determined by the condition of the myocardium, rather than by the valves, and its importance is emphasized.

Digitalis and the method of giving it in relation to the patient's body weight, etc., is fully detailed.

Quinidine Sulphate and its therapeutic use is fully described.

The use of electrocardiograph and polygraph are elucidated, but not allowed to crowd out the non-instrumental methods of diagnosis.

The case histories are from the author's practice, and are fully detailed.

Full reference to literature are given to enable the reader to secure further information on any subject desired.

It is fully illustrated, and the tracings were made by the author in the Heart Laboratory of the Boston City Hospital.

The index is especially complete.

Internal Medicine, a Work For The Practicing Physician on Diagnosis and Treatment With a Complete Desk Index. In three volumes, illustrat- with 427 text illustrations and 14 in color.

By James C. Wilson, A. M., M. D. Emeritus Professor of Practice of Medicine and Clinical Medicine in Jefferson Medical College and physician to its hospital, Physician Emeritus to Pennsylvania Hospital, formerly captain M. C. U. S. A. Assisted by Creighton H. Turner, M. D. J. B. Lippincott Company, Publishers, Philadelphia. Price per set, $12.00.

The first volume of this series is devoted to the Medical Diagnosis in general, the methods and their immediate results, symptoms and signs, tests. The second volume comprises the Clinical Application of Diagnostic methods, the natural history of diseases, direct and differential diagnosis and progrosis. In the third volume Samuel Bradbury, M. D., member of the faculty of Cornell University is the assistant collaborator and the volume is devoted entirley to treatment.

The entire three vlonmes are a practice of medicine by practitioners for practitioners arranged for quick reference. A doctor can work on the diagnosis side from the presenting symp-

tom, study it under the title of the disease or the organs affected with concise practical treatment for all conditions coming within the realm of Internal Medicine. A new and exclusive feature is the monographic index, by means of which a doctor has all the advantages of a number of separate monographs; for instance, by bringing together under heads like "pain," "vomiting," etc., every possible reference thereto with page numbers.

Essentials of Surgery, by Archibald L. McDonald, M. D. J. B. Lippincott Company, Publishers, Philadelphia. Price $2.50, net.

This book covers the general principles of surgival diseases and the pathological changes which result. Also, under separate headings, the more important surgical lesions of the body are considered. The matter is presented simply, and only general statements are made concerning:

1. Etiology, casual factors.
2. Pathology, local tissue changes produced, and general effects.
3. Natural course of the disease and spontaneous attempts to control the condition, also factors influencing the prognosis.
4. Indications for treatment, and the general principles which are to be considered. No attempt is made to discuss technical nursing methods, except special indications for their use.

Obstetrics for Nurses—By Joseph B. DeLee, M. D., Professor of Obstetrics in the Northwestern University Medical School, Chicago. New (6th) Edition, Entirely reset. 12 mo. of 525 pages, with 245 illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Cloth $3.00 net.

Althongh this book is intended primarily for nurses, the author believes that medical students will find something of value in it, since the duties of a nurse often devolve upon them in their early years of obstetric practice.

There are really two subjects considered in the book—obstetrics for nurses and the actual obstetric nursing—and the author has sought to combine them so that the relations of one to the other might be natural and mutually helpful in presenting this branch of medicine in a clear and interesting form.

The illustrations are nearly all original, and were made expressly for the work. The photographs were taken by the author from actual scenes, and the reader is invited to study the details, as especial care was taken to render the pictures true to life in every respect.

The text is the outgrowth of eight years' lecturing to the nurses of four different training-schools.

Since more and more women are being delivered in maternities, the technic of the latter has been given more space, and the methods of the Chicago Lying-in Hospital have been more fully presented.

The automobile is making many changes in the obstetric practice of both physician and nurse, and, to meet other conditions, a new technic is demanded. However, the vast majority of births still occur in the home and the nurse is often on her own resources; therefore, the old and tried methods still occupy the honored place in the book.

Many of the old illustrations were replaced by new ones, and several pictures and a colored plate were added.

Physics and Chemistry for Nurses, by A. R. Bliss, Jr., A. M., Phm. D., M. D. Lecturer on Chemistry and Materia Medica, Grady Hospital Training School for Nurses, Atlanta, and A. H. Olive, A. M., Ph. Ch., Phm. D. Lecturer on Chemistry, Hillman Hospital Training School for Nurses, Birmingham. 70 illustrations. Third edition thoroughly revised and rewritten and conforming to the requirements of the Standard Curriculum (1922) of the National League of Nursing Education. J. B. Lippincott Company. Publishers, Philadelphia. Price $2.50.

This well-known book has been entirely rewritten and in new form. So arranged that chemistry and physics can be separately taught within the twenty hours of the Standard Curriculum, or they can be taught together or more time devoted to each subject with this book as your text-book. In the consideration and discussion of scientific facts and theories, simplicity and lucidity have been the aim, with with a reasonable degree of fullness necessary to a serviceable conception of the subject. Suitable laboratory work of practical value is included.

Inflammation in Bones and Joints, by Leonard W. Ely, M. D., 144 illustrations. J. B. Lippincott Company, Publishers. Price $6.00, net.

A distinctly personal book, based on the results of original research and work in the pathological laboratory and co-relation of this work with clinical findings. A truly practical and delightfully written book on a very important subject.

Diseases of the Stomach and Upper Alimentary Tract by Anthony Bassler, M. D., F. A. C. P. Professor of Gastro-Enterology, New York Polyclinic Medical School and Hospital and the late Fordham University Medical College; Visiting Gastro-Enterologist, Peoples and Christs hospitals, and consulting Gastro-Enterologist Stuyvesant Polyclinic and Beth-David hospitals; Fellow American College of Physicians and New York Academy of Medicine; Ex-Chairman, section Gastro-Enterology and Proctology, A. M. A.; member of the American Medical Association, and medical societies of the state and county of New York, American Roentgen Ray Association,

New York Gastro-Enterological Association; honorary member of the Southern Gastro-Enterological Association; etc.

Fifth edition, revised and enlarged. Illustrated with 151 half-tone and line text engravings and 93 full-page plates (with 164 figures) plain and in colors, from original photographs and drawings. F. A. Davis Company, Philadelphia, Publishers. Price $8.00.

The advances of the last few years have necessitated the issuing of this new edition. The accepted work in secretion of gastric juice, gastric motility and sensation are incorporated. Much new matter has been added in the x-ray examination. The now generally accepted fractional test-meal method of gastric analysis is fully presented, and here and there new matter on the examination of gastric contents. The gastric response to foods is fully presented. Practical matters on duodenal and rectal feedings are included. New matters, too numerous to mention, will be found in the clinical sides of the subject.

The Patient's View Point, by Paluel J. Flagg, M. D., author of The Art of Anesthesia. The Bruce Publishing Co., Milwaukee, Wisconsin.

The author describes in a most fascinating manner the growth and progress of the medical man from his beginning as a medical student, to his more mature acknowledgment of the fundamental truths of life. The progress is most interestingly sketched and the fundamental principles finally stated in a most forceful acknowledgment and tribute to the Creator.

The author is most happy in his presentation of argument and conclusion. The medical man will enjoy following the thinking of Doctor Flagg. He will re-live many of his own experiences, coming finally to the acceptance of the spiritual and infinite values in life as the final test of professional success.

Legal Medicine and Toxicology, by many specialists. Edited by Frederick Peterson, M. D., Manager Craig Colony for Epileptics; Walter S. Haines, M. D., late Professor of Chemistry, Materia Medica and Toxicology, Rush Medical College; and Ralph W. Webster, M. D., Assistant Professor of Medical Jurisprudence, Rush Medical College. Second edition. Two Octavo volumes, totalling 2268 pages, with 334 illustrations, including 10 insets in colors. Philadelphia and London: W. B. Saunders Company. 1923 Cloth $20.00 net.

This book has been the standard of comparison in its field since its first publication. The experts and specialists who have written the monographs of which these two volumes consist have contributed very materially to the advancement of legal medicine, and their testimony and experience have in many cases been woven into court rulings and precedents. This new (2nd) edition is virtually a new work, so thoroughly has it been revised. It has been entirely reset. The citation of cases, histories and court opinions, the inclusion of much clinical material such as symptomatology, diagnosis and even detailed treatments, give the book a clinical interest that is extremely unusual in a work of this kind. The text, of course, is illustrated. Where technic is required, such as in autopsies, it is given and explicitly shown. All laboratory tests are detailed and illustrated. It will stand for many years as the authority.

Regional Anesthesia, by Gaston Labat, M. D. Lecturer on Regional Anesthesia at the New York University; Laureate of the Faculty of Sciences, University of Montpellier; Laureate of the Faculty of Medicine, University of Paris; Formerly Special Lecturer on Regional Anesthesia; The Mayo Foundation, University of Minnesota. With a foreword by William J. Mayo, M. D., Octavo of 496 pages with 315 original illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $7.00 net.

This is a magnificent work—noteworthy for lucidity of style, beauty and instructiveness of its original illustrations, of which there are 315.

The work throughout is the expression of the author's personal experience with many thousands of cases. It gives the technic of regional anesthesia, and its clinical application. It is not theory; it is not a historic review—but a detailed description of methods and their application in surgery of the human.

The different segments of the body are studied from the viewpoint of anesthesia. Each technical description is preceded by a short review of the anatomy of the region, with special reference to nerve distribution. Indications are given as to the type of operation permissible, but the choice of operation is left to the judgment of the operator. Special chapters are devoted to opertions on the eye, ear, nose, throat, and teeth, and to genito-urinary work. Spinal anesthesia is given a separate chapter because it results from a precedure totally distinct from the rest.

Diseases of the Rectum, Anus, and Colon, by Samuel Goodwin Gant, M. D. LL. D., Professor and Chief of the Department for Diseases of the Colon, Rectum, and Anus at the Broat Street Hospital, Graduate School of Medicine, New York City. Three Octavo volumes, totalling 1616 pages with 1128 illustrations on 1085 figures and 10 insets in colors. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $25.00 net.

Dr. Gant's work on the Rectum, Anus, and Colon is the first really complete and comprehensive one on these subjects in the past ten years. It is comprehensive because it includes the entire

intestinal system and related diseases, and is just as much medical as surgical. There are pages of purely medical—office—treatment; 105 prescriptions and the exact dosage of every drug indicated. Constipation, auto-intoxication, obstipation with intestinal stasis, receive unusual consideration. The use of fluoroscopy and radiographs in the study of diseases of the gastrointestinal tract are not overlooked. Physiotherapy in all its divisions is accorded a full discussion. As to operative technic, it would be difficult, if not impossible, to find a work wherein operative technic is so clearly and so fully described and illustrated. There are full details on anesthesia, general, local, and regional. Post-operative management is gone into thoroughly—and this is a most important factor in final results. There are 1128 superb illustrations, all new and original, 33 in colors.

Text-Book of Therapeutics Including the Essentials of Pharmacology and Materia Medica, by A. A. Stevens, M. D., Professor of Applied Therapeutics, University of Pennsylvania, Philadelphia. Sixth edition, entirely reset. Octavo of 793 pages. Philadelphia and London: W. B. Saunders Company, 1923. Cloth $6.25, net.

The new (6th) edition of Dr. Stevens' "Therapeutics" gives you everything new in the field of therapeutics that has been proved of value at the bedside. The work has been rewritten and reset.

It gives you over 500 pages on drugs—their derivation, forms, composition, pharmacologic, local and cumulative actions; their toxicology, therapeutic indications, dosage, and administration.

It gives you 200 pages on the application of this therapeutic knowledge in the actual treatment of disease. It gives you detailed treatment by drugs and other methods of therapy, giving the exact dosage and in many, many cases actual prescriptions.

It gives you the management of diseases and their complications—what remedies to use, how to use them, how to treat the complications.

It gives you an entire section on remedial measures other than drugs—electricity, massage, heat and cold, spinal puncture, x-ray, radium, actinotherapy, etc.

It classifies drugs according to their actions—circulatory stimulants and depressants, vasoconstrictors and vasodilators, cerebral excitants and depressants, etc.

It gives you a serviceable Therapeutics together with modern Pharmacology and Materia Medica.

It is written along the same practical lines as the author's new "Practice of Medicine" which has met with such wonderful success. It is based on experience.

NEWS ITEMS

Doctor and Mrs. Charles Horace Mayo announce the marriage of their daughter Edith to Doctor Frederic Wharton Rankin, on Tuesday, the twelfth of June, One thousand, nine hundred and twenty-three at Rochester, Minnesota.

Dr. and Mrs. Rankin will be at home after the first of October at the Edgeland Apartments, Louisville.

The National Board of Medical Examiners will hold the next examination on Part I, Sept. 24, 25, 26, 1923. Part II, Sept. 27, 28, 1923.

Further information may be obtained from the Secretary, Dr. J. S. Rodman, 1310 Medical Arts Building, Philadelphia, Pa.

Dr. Charles D. Enfield announces that after June 1st, 1923 his practice will be confined to the use of X-rays in diagnosis and treatment.

Laboratory 1100 Francis Building, Louisville. Hours 9 A. M. to 5 P. M. Sundays 11 A. M. to 1 P. M.

Extreme Dilatation of Left Auricle.—Emanuel records a case in which the heart was of such enormous size as to appear to fill the entire thorax. The great size was due to auricular dilatation and, in the main, to dilatation of the left auricle. This had dilated, for the most part, in a horizontal direction, so that during life it presented in the right axilla beyond the right edge of the right auricle and was tapped under the belief that it was a pleural effusion. Emmanuel believes that the dilatation is an expression of a pathologic condition that may affect the mitral valve and myocardium at the same time, and that condition is a carditis, frequently of rheumatic origin. Pericardial adhesions are always present in these cases. The dilatation is not the result of these pericardial adhesions in the sense that the adhesions act mechanically by traction on the auricle, for the dilatation is uniform. The pericardial adhesions, like disease of the mitral valve, are merely the permanent indications of an erstwhile carditis, the brunt of which, for some unknown reason, fell on the myocardium of the auricles. The auricular walls thus weakened by an attack of myocarditis give way under the intra-auricular pressure.

Invasion of Body by Bacteria from Intestinal Tract.—There seems to be no question, Irons says, as to the passage of certain resistant organisms, such as tubercle and anthrax bacilli, through the intact intestinal mucosa. Less resistant organisms rarely pass the intestine of healthy animals. Under conditions in which resistance to infection is decreased or when unusually hardy organisms enter the bowel, or when lesions of the bowel are present, Moody and Irons believe it is reasonable to suppose that bacteria may enter the blood stream from this source.

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ANNUAL MEETING, CRAB ORCHARD SPRINGS, SEPTEMBER 17, 18, 19, 20, 1923

COUNTY SOCIETY REPORTS

Boyd: Resolutions of the Boyd County Medical Society on the death of Dr. J. M. Prichard:

Whereas: In the course of human events, it has pleased Divine Providence to call from our midst Dr. John Milton Prichard. Therefore, be it

Resolved: That we give expression of our feeling of regret and loss on account of his death.

Resolved: That the Doctors of Ashland have lost a true friend. The people of Boyd County a public benefactor that cannot be replaced.

Resolved: By the Boyd County Medical Society that the medical profession has lost an able and silled practitioner.

Resolved: That we hereby tender to his sorrowing wife and relations our sincere sympathy in their sadness.

Be it further resolved: That these resolutions be spread upon the minutes of the society and a copy be furnished the Kentucy Medical Journal and to his bereaved widow and to the Ashland Daily Independent.

H. S. SWOPE,
E. R. FITCH,
W. O. EATON,
Committee

Estill: The following physicians met in Dr. T. Wallace's office in Irvin: B. S. Broaddus, A. Agee, R. R. Snowden and organized the Estill County Medical Society. Dr. Wallace was selected temporary chairman, Dr R. R. Snowden of Ravenna, Kentucky was selected temporary secretary. The following physicians were selected for permanent officers: Dr C. Marenm, president; Dr. S. T. Scrivner, secretary, Dr. A. Agee, treasurer, June 5th being date for next meeting. A motion was made and carried that the society use their influence to elect members to the legislature who will favor passing a law or laws prohibiting chiropractors in this state. The meet was then adjourned till June 5, 1923.

R. R. SNOWDEN, Secreary.
T. WALLACE, Chairman,

McCracken: The McCracken County Medical Society has been having regular, well attended bimonthly meetings all the year.

A number of good papers have been read and interesting discussions followed.

On May 8 the County Society was host to the Southwestern Kentucky Medical Association in their regular annual banquet at Shriner Club Hall. One hundred and forty plates had been prepared of tempting and delicious food, and full justice was done by a fine body of hungry doctors. Dr. Frank Boyd, president-elect of the Kentucky State Medical Association was toastmaster and a number of happy after-dinner speeches were made by Mr. J. C. Utterback, "Good Roads" Ben

Weile, Rev. Geo. B. Winton and Dr. Louis Frank, President State Medical Association.

At a recent meeting of the County Medical Society the following resolution was unanimously adopted and the Secretary was instructed to send a copy of said resolutions to each member of the society.

Resolved by the McCracken County Medical Society that the entire "Abrams method" is such a palpable fraud that this Society considers it beneath its dignity to appoint a committee to investigate, and, that the pursuit of the "Abrams method" on the part of any member of this Society shall be considered inconsistent with membership in this Society, and any one practicing ths method, is requested to furnish the Society with his resignation.

J. T. REDDICK, Secretary.

Bourbon: The Bourbon County Medical Society held its regular meeting Thursday evening, May 17, 1923 at 8 p. m. at the Community Building. The reading of the minutes was dispensed with upon motion of the society.

Dr. J. H. Skavlen of Cincinnati read a paper on "Sinus Disease and Lung Infection."

Dr. Victor Fishbach, Cincinnati, read a paper with the same title.

They then showed some lantern slides illustrating their subject.

The discussion was opened by J. E. Wells, followed by McDowell, Rees and Moore of Cynthiana, F. M. Faries, J. A. Orr, C. A. Daughtry and M. J. Stern.

Closed by Drs. Skavlen and Fishback.

MILTON J. STERN, Sec.

MINUTES OF THE EYE, EAR, NOSE AND THROAT SECTION OF THE KENTUCKY STATE MEDICAL ASSOCIATION

The meeting of the section was held at the Country Club, Paducah, October 16, 1922, and was called to order at 10 a. m. by the chairman, S. G. Dabney, Louisville.

The minutes of the previous meeting were read by the Secretary (Gaylord C. Hall) and approved.

E. V. Edwards, Mayfield, was elected unanimously a member.

A list of 23 applicants for membership of the section was submitted to the usual routine as required by the by-laws, and at the same time these applicants were invited to participate in the proceedings of the section pending their election.

On motion of Dr. Griffith, Dr. R. H. Cowley, Berea, was made a charter member of the section.

W. B. McClure suggested that the by-laws be changed to provide for a chairman-elect of the section. (To lie over until next year.)

Seconded by Dr. Griffith and carried.

The following officers were nominated and declared duly elected: Chairman, H. G. Reynolds, Paducah; Vice Chairman, Thomas L Bailey, Madisonville; Secretary, Gaylord C. Hall, Louisville, re-elected; Treasurer, I. A. Lederman, Louisville; member of the Council, S. G. Dabney, Louisville.

The Secretary stated there were two things to bring up. The first, the section should request the general secretary, in making up the program, to see that there were some papers relating to the eye, nar, nose and throat subjects and not have these papers only on the day of the section meeting.

The other question was the regulation of the practice of trachoma clinics under the jurisdiction of the State Board of Health.

The Secretary presented the following resolution:

Whereas, the general sessions of the Kentucky State Medical Association have been held without adequate representation on the program of papers relating to the eye, ear, nose, and throat subjects, therefore, be it

Resolved, That it is the sense of Eye, Ear, Nose and Throat Section, such papers be presented and the section be given adequate representation on the general programs of future meetings.

Resolved, That a copy of this resolution be sent to the General Secretary of the Association.

The resolutions were seconded and carried unanimously, and the Secretary was instructed to transmit these resolutions to the General Secretary State Medical Association.

Regarding the question of conducting regular trachoma clinics under the jurisdiction of the State Board of Health, and of taking eye cases that are adequate to pay for the work that is done, Dr. Reynolds moved that the chairman appoint a committee of three to confer with the State Board of Health in handling the question relative to a trachoma clinic which has been instituted and carried on by the State Board of Health.

Seconded and carried.

The chair appointed as members of this committee Drs. Reynolds, Stucky and Pfingst.

The following papers were then read and discussed:

1. "Some Frequently Overlooked Causes of Headache," by J. A. Stucky, Lexington.

2. "Causes of Blindness in Kentucky School of Blind," by I A. Lederman, Louisville.

3. "Complications of Cataract Extraction and Their Treatment," by A L. Bass, Louisville.

4. "Subconjunctival Dislocation of Crystalline Lens, With Report of Three Cases," by Thomas L Bailey, Madisonville.

GAYLORD C. HALL.

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EDITORIAL

REDUCED RATES TO CRAB ORCHARD

Physicians planning to go to Crab Orchard by railroad will be pleased to learn that reduced rates are provided to this very popular summer resort from every point in Kentucky and that it will not be necessary to bother about a certificate to secure any reduction in fare since the special round trip rate is provided for all visitors to Crab Orchard during the summer and until September 30th.

At some of the previous meetings of the State Association there has been some confusion in securing sufficient certificates to guarantee the rates as provided for in the agreement with the Railroads and this has nearly always resulted from the fact that many of the visiting members failed to qualify when purchasing their tickets. Therefore, the members are urged to bear in mind that it is only necessary this year when purchasing tickets to apply for the regular summer round trip rates to Crab Orchard and that a certificate will not be necessary.

RABIES.

From reports received by the State Board of Health and the number of heads of animals coming into the State Laboratory from many different points in the State, it is easily assumed that there is again at this season of the year, indications of a rather wide spread incidence of Rabies in the smaller domestic animals and it does not seem out of place to remind the physicians of the State that they should very guardedly advise the victim or his family in each instance where a bite from any of these small animals is received. If the animal has no apparent symptoms of Rabies yet there should be ground for the least suspicion and the animal should be kept under close confinement for at least three, or it may even be best to extend the time to nine days. If there are any symptoms at all indicating the possibility of Rabies in the animal, the head should be removed from the body in its entirety and handled as per instructions below.

We would like to emphasize that every physician in Kentucky should be thoroughly familiar with the method of securing and forwarding the heads of animals suspected of having Rabies since so frequently the State Laboratory receives either the brains in some glass container or other, already undergoing degeneration and unfit for any analysis or else the head has been carelessly packed and delayed in shipment and in such state of decomposition as to make the brain substance unfit for examination. In order that the brain of the animal may be in the very best condition for laboratory analysis the following directions should be carefully adhered to:

(1) Cut the head off close to the shoulder.

(2) Put the head in a water tight container or bucket.

(3) Put this bucket or container in a larger container or box and pack around the inside container as much ice as can be carried.

(4) The larger container should be sealed, bound or nailed securely for shipment and address label made secure and shipped to Dr. L. H. South, care State Board of Health, 6th and Main Streets, Louisville, Ky.

(5) In all instances the name of the family physician should be attached to the container as Sender.

It is not our purpose in this editorial to make any suggestion to the physician in regard to the treatment of the victim of the rabid dog, other than to emphasize that the Pasteur treatment should be instituted immediately and this can be secured through the State Board of Health at cost for home treatment or the patient may be sent to the Laboratory of the State Board of Health.

DR. DUVALL IS HONORED.

There is published in the July issue of the American Journal of Public Health an article under the title "A Well Rounded County Health Department," by Dr. George V. Duvall, County Health Officer of Daviess County, Kentucky, and not only do we wish to call attention to the fact of the article being unusually good but to remind the profession and the host of friends of Dr. Duvall that under his direction there is being conducted one of the best Health Departments anywhere in the county. The Daviess County Medical profession has been most loyal to Dr. Duvall and in his article he very kindly reflects the fine influence of the profession there in molding public sentiment for the permanent establishment of the Health Department and we freely predict that the future of the work in Daviess County is assured.

SUSAN BUCKINGHAM MERWIN

Although the activities of the Kentucky School for the Blind have no bearing upon the practice of medicine, and the institution is in no sense a hospital for the treatment of eye diseases, but merely serves in the capacity of a public school for those who on account of blindness, are denied attendance at ordinary schools, yet the work done at the institution in the endeavor to elevate the blind child to the level of the more fortunate through education and industrial improvement naturally appeals to every physician in the State. Those of us who are so fortunate as to have visited the Kentucky School for the Blind and have become familiar with the wonderful work which is going on there in a most unostentatious way alone realize fully what a great loss our State has sustained in the recent untimely death of Miss Susan Merwin, who, since 1912, has been superintendent of the Kentucky School for the Blind.

The high standard of efficiency which this institution has reached is in a large measure due to the energy and enthusiasm of Miss Merwin. Not only has her capable welfare work among the blind been of inestimable value but through her friendly interest and motherly care of the children of the institution she endeared herself to every child. Her every thought centered in the sightless children and her interest followed them long after their passing out of the institution. Miss Merwin had a keen insight into affairs pertaining to the blind which served her well in the problems with which she had to cope. She had a pleasing personality which endeared her to her associates at the Blind School. She was untiring in her efforts to accomplish her aims and as the writer knows from personal experience, was ever ready to give to others advice regarding the welfare of the blind.

After graduating from the Girl's High School and Normal School of Louisville, Miss Merwin entered the Kentucky School for the Blind as a teacher twenty-eight years ago. By her zeal and efficiency she soon attracted the attention of the educators of the blind, who, in 1895, soon after she entered upon her career, accorded her recognition by electing her president of the American Association of Instructors of the Blind. She was at that time serving as president of the Louisville Conference of Social Workers. In 1912 the Trustees of the Blind School paid tribute to her efficient services by electing her Superintendent of the Institution to succeed the late Prof. Huntoon, under whom she had entered the institution. She was also placed at the head of the printing house for the blind, which is conducted in connection with the Blind School and which furnishes raised type books and supplies for the blind of the entire country. The printing house has grown from a modest beginning to its present proportions almost entirely through the efforts of Miss Merwin, who influenced Congress a few years ago to increase the Federal appropriation for the Printing House from $10,000 to $50,000 a year. She was also instrumental in obtaining from the last Legislature of Kentucky an appropriation of $25,000 for an addition to the Printing House.

Miss Merwin was progressive and always alert to opportunities to improve herself. She had planned this summer to visit Europe to investigate the printing for the blind. She had also in mind the building of a gymnasium, a swimming pool and auditorium in the near future and hoped to be able to remove the furnace and laundry from the main building. She had planned to go before the next session of our Legislature in an endeavour to secure additional appropriation to enable her to realize these ambitions. Her one great desire was at some time to be able to introduce the Cottage system of housing for the younger children.

Too much credit cannot be given Miss Merwin for her endeavour in behalf of the adult blind, who, on account of their age, are not admitted to the Kentucky School for the Blind. With Mr. C. B. Martin, who has just been elected Superintendent of the school, Miss Merwin, in 1913, established a small work shop where blind men were taught to make mops and brooms. By interesting the public the products of the shops were marketed and a rapid growth of this venture followed until now a rather large plant is owned and operated by the Institution on Frankfort Avenue where the adult blind are taught to read and write and are educated in economic pursuits to make them self supporting and independent. Miss Merwin was instrumental a few years ago in adding to this workshop a department for adult blind women, where baskets, towels, rugs, tatting and other fancy work are being made.

Miss Merwin's devotion to the cause of the blind was exhibited even in her last will in which she bequeathed quite a large portion of her savings to the institute in which and for which she had lived. With much work already accomplished and with such momentous plans in the making, the passing of Miss Merwin has created a vacancy which will be most difficult to fill. Many of our Kentucky doctors who have been privileged to know Miss Merwin and who have been inspired by her untiring efforts in behalf of those afflicted with blindness mourn with her pupils, associates and relatives her untimely death. May her influence long be felt and may her work influence others to emulate her example.

ADOLPH O. PFINGST.

SCIENTIFIC EDITORIAL

OBSTETRICAL COLUMN

By Alice N. Pickett

Director Prenatal Clinic, Louisville City Hospital.

The two cases of Placenta Praevia which will be reported in this series brought to our minds our grave responsibility in handling this condition. It might be well for us to review the various methods of procedure.

1. Delivery by caesarian section.
2. Delivery by the vaginal route.

1. Doctor DeLee states his position on the choice of caesarian section in placenta praevia, as follows

"An indication for caesarian section will arise in cases of central or partial placenta praevia. When the pregnancy is at or near term, with a living child, the mother in good condition, the cervix being closed or approximately difficult in dilatation, conditions most common in primipara. A necessary requirement also is that the aseptic facilities of a good maternity can be had or improvised at home, and the man capable of his task is obtainable."

In four years in the Louisville City Hospital, we have resorted to caesarian section in only one case, a primipara, all the others have been multiplara for whom the manual dilatation of the cervix was not a matter of great difficulty.

2. Delivery by the Vaginal Route.

In delivery by the vaginal route we teach our students there is one thing to do and three ways of doing it. *The thing to do is to stop the bleeding by jamming the placenta against the uterine wall,* while the dilatation of the cervix is being accomplished. The three ways of doing it are:

1st. By the insertion of a bag.

2nd. By artificial rupture of the membrane.

3rd. By version.

1st. Bag Method.

The placenta may be jammed against the uterine wall by a bag which has been inserted into the uterus *on top of the placenta.* This of course necessitates the rupture of the membranes. Gentle contraction is made on the bag just sufficient to stop the bleeding but not enough to bring about asphyxia of the baby by squeezing too much blood out of the placental site, and not enough to induce contractions of the uterus so violent that the rupture of the highly vascular cervix might result. The bag is expelled spontaneously, after complete dilatation, the baby's head taking its place as a placental tampon. We have not used this method during the last four year.

2nd. Artificial rupture of the membranes.

By the artificial rupture of the membranes well to the side of the placenta, the head is allowed to jam the placenta. It is indicated in cases of marginal placenta praevia with the patient in active labor. In such cases the bleeding does not come on until the cervix has opened to a considerable degree because the placenta is not much disturbed in the earlier stages of dilatation. We have used this method in two cases. In Case No. 31 of this series, the woman delivered spontaneously by this method. Such a happy termination is exceedingly rare.

3rd. By Version.

By version the breech is brought down to jam the placenta and complete the dilatation. In using this method we also advise against traction greater than just sufficient to stop the bleeding. The patient should deliver spontaneously the anesthesia being removed immediately after version. With the breech in the cervix, the case is under control, and no hurry is indicated. On the contrary, a rapid delivery from this point may result in asphyxia of the baby or the rupture of the cervix. The great majority of our cases have been delivered by this method. We have not lost a mother in four years but our fetal mortality has been high, probably 50%. It must be remembered, however, that a large percentage of our babies have perished in utero, before the admission of the mother to the hospital.

In no case have we had to resort to the utero-vaginal pack to control the bleeding of the third stage. In all our cases, the bleeding has been controlled by the uterine contraction following the delivery of the baby.

Eight Fetal Deaths. There were three fetal deaths occurring in utero. (Cases 1-11-35). Two of the mothers gave four plus Wasserman, the other case was delivered in the home without prenatal care and no Wasserman test has yet been made.

Case 22. Para. 1. Baby premature at six months. Mother gave as a probable cause of prematurity, a fall from the street car. In such cases, we always fear labor may have been induced. This girl, however, was free from temperature during her puerperium.

Case 31 (Reported under Placenta Praevia).

Case No. 4 Prematurity. L. D. Hospital Number 49816. Dr. Mercer, Interne; Dr. McConnell, Staff. Para 3.

Prenatal clinic. Wasserman negative. Two previous labors, both difficult. One breech and one cephalic position. Manual dilatation resorted to in each case after labor had been in progress for several days.

Pelvic measurements normal. Tilt of pelvis exaggerated. Cervix fixed by post adhesions. She entered hospital in labor, with

Obs. Serv. Lou. City Hosp. 5-10-23 6-10-23. Dr. Herman Mercer Int. Dr. Ext. Chas. Fleshman.

Hospital Deliveries

No.	Reg. No.	Para	P. C. Care	B.P.R.	Wass.	Prenatal Syph. Tr	Ch. of Pelv.	Ch. of Delv.	Pos.	Wt. Baby	At Term	Fate of Baby	Condition of Mother	Discharge Baby
1.	50139	1	yes	normal		none	24-25-19	Spontaneous	Breech	?	8 mos.	Dead	good	dead
2.	50165	7	yes	120-140	neg		normal	Spontaneous	?	8.1	yes	living	good	good
3.	50164	8	yes	normal	neg		normal	Spontaneous	L O A	7.11	yes	living	good	good
4.	49816	3	yes	normal	neg		normal	Spontaneous	Breech	3-3 1-26	6 mos.	lived 3 hrs.	good	dead
5.	50222	2	no		neg		20-25-18	Potter's Version	L O P	7.10	yes	living	fairly good	good
6.	50265	1	yes	normal	neg		24-25½-20	Spontaneous	R O A	6.4	yes	living	good	good
7.	50274	1	yes	normal	neg		gen. cont. pelv.	Spontaneous	L O A	6.7	yes	living	good	good
8.	50235	1	yes	normal	neg		normal	Spontaneous	L O A	6.7	yes	living	good	good
9.	50261	5	no		neg		22 1-2-24 1-2	Forceps	R O P	7.2	yes	living	good	good
10.	50239	11	yes	normal	neg		24-26 1-2-20	Spontaneous	L O A	5.7	yes	living	good	good
11.	50310	1	no			3 Mo. 2 yrs. ago	not made	Spontaneous	?		yes	dead	good	dead
12.	50354	3	yes	low	neg		normal	Spontaneous	L O A	7.12	yes	living	good	good
13.	50366	4	yes	115-130	neg		normal	Spontaneous	L O A	7.4	yes	living	good	good
14.	50403	1	no		neg			Spontaneous		4.14	8 mos.	living	good	good
15.	50099	6	yes	normal	neg		normal	Spontaneous	L O A	7.9 1-2	yes	living	fairly good	good
16.	60437	1	no		neg		small outlet	Forceps	L O A	6.2	yes	living	good	dead
17.	49975	2	yes	130-140	neg		25-27-22	Spontaneous	L O A	7.13	yes	lived 1 1-2 hrs	good	good
18.	50519	2	yes	130	neg		normal	Spontaneous	R O A	7.3	yes	living	good	good
19.	50546	1	yes	normal	neg		n. cont. mod.	Spontaneous	R O A	9.10	yes	living	good	good
20.	50503	1	no				25-28-17.5	Potter's Version	L O A	7.8	yes	living	good	good
21.	50568	1	yes	120-138	neg		flat pelvis	Spontaneous	R O A	5.8	yes	living	good	good
22.	50613	1	no		neg			Spontaneous	Breech	3.0	6 mos.	living	good	dead
23.	50637	1	yes	122-130	neg		27-28-20	Spontaneous	R O P	6.11	yes	lived 10 hrs.	good	good
24.	50646	2	yes	normal	neg		normal	Spontaneous	L O A	7.5	yes	living	good	good
25.	50673	1	yes	122-130	neg		normal	Spontaneous	R O A	9.2	yes	living	good	good
26.	50674	3	yes	normal	neg		27-26-20-12	Spontaneous	L O A	6.15		living	fair	good
27.	50699	1	no		not made.			Spontaneous	L O A	5.2	yes	living	good	good
28.	50328	1	yes	normal	neg		normal	Spontaneous	L O A	8.5 1-2	yes	living	good	good
29.	50707	1	yes	120-140	neg		25-27-21 1-2	Spontaneous	R O A	8.6	yes	living	good	good
30.	50398	4	yes	normal	neg		normal	Spontaneous	R O A	8.2	yes	living	good	good
31.	50780	7	no		neg			Spontaneous	?	?	Slightly pre.	dead	good	dead
32.	50750	3	yes	124-145	neg		Genl. Cont.	Forceps	R O P	7.15	yes	living	good	good
33.	50796	1	no		neg		20-25-29-18	Spontaneous	R O A		yes	dead	good	dead
34.	50597	1	no		not made.			Forceps	R O P	6.10	yes	living	good	fair LOA
Home Deliveries:—														
35.			no		not made.			Spontaneous		3.0?	8 mos.	living	good	dead
36.		6	yes	120-138	neg		normal	Spontaneous	L O A	?	yes	living	good	good
37.			no		not made.			Spontaneous	L O A	?	yes	living	good	good
38.		7	yes	normal			normal	Spontaneous	L O A	?	yes	living	good	good
39.		3	yes	normal			normal	Spontaneous	L O A	?	yes	living	good	good
40.		4	no					Spontaneous	?	?	yes	living	good	good
41.		6	yes	128-145			normal	Spontaneous	?	?	yes		good	good
42.		2	no					Spontaneous	?	?	yes		good	good
43.		5	yes	normal			normal	Spontaneous	R O A	?	yes		good	fair—ulcer on eyes
44.		8	no					Spontaneous	?	?	yes		good	good
45.		8	no					Spontaneous	?	?			good	

No. of clinic cases, 29; Not clinic, 16.
No. of fetal deaths, 8; 5 still born, 3 died in first 48 hours.
No. of maternal deaths, 0.

No. of Puerperal infections, 0.
No. of Eclampsia, 1.
No. of Maternal syphilis, diagnosed, 2.

No. of Post Partum Hemorrhage, 3 slight.
No. of retroversion on discharge, 9; 7 cases slight.

a history of ruptured membranes. Abdomen was the size of 7 months pregnancy and there was no leaking of amniotic fluid. The x ray report on the following day reported child apparently eight months. She was put to bed and during the following eighteen days she was suffering from uterine cramps much of the time, in spite many attempts to quiet the contractions by rest and morphine. On the 18th day, after she had been in continuous labor for 43 hours, with no progress and one finger's dilatation, a bag was inserted and 9 hours later a 6½ month fetus was delivered spontaneously. The child lived only a few hours. The cervical adhesions were doubtless the course of the trouble.

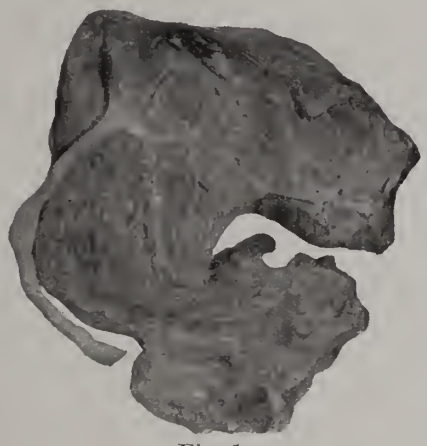


Fig. 1.

Case No. 16 L. B. Hospital Number 60937. Dr. Mercer, Interne; Dr. McConnell, staff. Para 1.

Forceps were applied for prolonged second stage pains, no progress having been made for the last two hours and twenty minutes. Outlet was small and the inlet only fair. The extraction was difficult, though the position was L. O. A. A deep second degree tear was sustained. This was repaired at once with good results. Child died on the second day from cerebral hemorrhage due to injury at birth.

Case No. 33 S. G. Hospital Number 50796. Dr. Mercer, Interne; Dr. Rubel, Staff. Para 1.

No prenatal care. Position R. O. A. External measurements, between the spines 20, between the crests 25, external conjugate 18. No internal measurements were taken as the patient entered the hospital in labor. A full term baby was born dead after three hours of second stage pains. The cord which was about the neck was tightly stretched and the baby showed some exophthalmus. Whether the death was due to this tension or to cerebral hemorrhage, we were unable to say, as no post-mortem was allowed. A significant point in the history, however, is the record of three antepartum injections of pituitrin. As a rule no pituitrin is given in the hospital before the delivery of a baby, except on the order of the staff physician. This was given without the knowledge or consent of a member of the staff, during Dr. Mercer's absence from the ward.

Four Forceps Deliveries. Case No. 9 L. F. Hospital No. 50261. Dr. Mercer, Interne: Dr. Pickett, staff. Para 5.

This patient had comparatively small measurements and the baby was in R. O. P. position. Sac became exhausted in second stage when the pains grew progressively feebler. Forceps were applied, after the head had been rotated manually into an R. O. A. position.

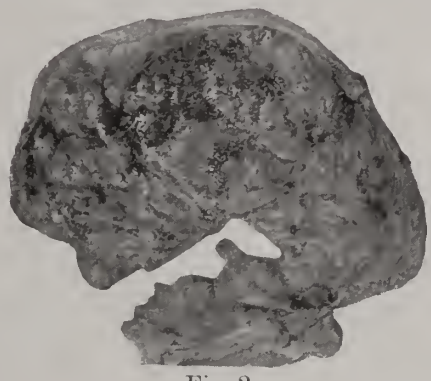


Fig. 2.

The weight of the baby was 7 pounds and 2 ounces. Mother and child discharged in good condition.

Case No. 16. (See under fetal deaths.)

Case No. 34. (See under eclampsia.)

Case No. 32. D. A. No. 50750. Dr. Mercer, Interne: Dr. Rubel, Staff. Para 3.

This patient was treated in prenatal clinic. She gave a history of having had no full time child but two miscarriages. Her measurements showed a generally contracted pelvis of moderate degree. Forceps were applied, because of cephalo-pelvic disproportion, following good second stage pains, with no progress. A living baby was delivered, the marked head molding indicating that forceps might have been applied earlier with less risk to the child and suffering to the mother. Baby weighed 7 pounds and 15 ounces. Mother and child discharged in good condition.

Two Versions. Case No. 5 K. G. Hospital Number 5222, Dr. Mercer, Interne, Dr. Speidel, staff. Para 8.

Pelvic measurements, between the spines 20, between the crests 25, external conjugate 18. No internal measurements were made as the patient had received no prenatal care and entered the hospital in labor. A Potter's Version was done by Dr. Speidel after 39 hours

of labor, the indication being uterine inertia. A living baby weighing 7 pounds and 10 ounces was delivered without laceration. Mother and child discharged in good condition.

Version No. 2. Case No. 20. B. S. Hospital No. 5503, Dr. Mercer, Interne; Dr. McConnell, staff. Para. 1.

No prenatal care. Version performed after 41 hours labor, there being no progress for the 14 hours preceding delivery. External measurements done at time of delivery were—between the spines 23, between the crests 28, external conjugate 17½. A living baby weighing 7 pounds and 8 ounces was delivered by Potter's Version.

In bringing down the arms a clavicle was fractured and a slight first degree tear was sustained. The clavicle was retained in proper position and the laceration repaired at once. Mother and child discharged in good condition.

Two Placenta Praevias.

First case—mother and child saved.

Second case—Mother saved—baby dead on admission.

Case No. 10. Hospital Number 5239. Dr. Mercer, Interne; Dr. Pickett, staff. Para 11.

A clinic patient entered the hospital with history of bleeding. She was kept in bed under close observation for three days before the delivery, the diagnosis being marginal placenta praevia. She continued to have bleeding at long internals, but no interference was thought necessary as the blood lost was at no time considerable. A living baby was delivered spontaneously weighing 5 pounds and 7 ounces. On examination of placenta, a blackened, bloodless area was found near the margin, indicating that premature separation of this part from the uterine wall had taken place some time previous to delivery.

Case No. 31 N. B. Dr. Mercer, Interne; Dr. Rubel, staff. Para. 7.

This patient came to the hospital bleeding profusely and almost exsanguinated. She was 8½ months pregnant. Without time for examination, a diagnosis of placenta praevia was made. The pains were violent and while the doctors were scrubbing up preparatory to delivery by version, the baby was born spontaneously. The membrane had ruptured some time before, allowing the head to ram the placenta, thus lessening the hemorrhage. Undoubtedly the spontaneous rupture saved this woman's life. The uterine contractions were so powerful that the head bored its way down through the placenta, which was also delivered spontaneously, immediately after the expulsion of the child. The photograph of the placenta shows the cord excentrically placed, and the rent in the placenta indicates a central implantation over the internal os. This is also proved by the anemia of all the area surrounding the rent. The only part of the placenta with normal amount of blood is shown near the upper margin. (Plate No. 2.)

One Eclampsia. Mother and baby saved.

Case No. 34 F. S. Registration No. 50597, Dr. Mercer, Interne; Drs. Rubel and Pickett, staff.

This patient was a little negro girl, fourteen years old who had received no prenatal care. She entered the hospital unconscious and with stertorous breathing. She went into violent convulsions a few minutes after admission. The urine showed a great amount of albumin, many hyalin and granular casts. Her blood chemistry was negative as to non-protein nitrogen and urea. On admission she was found to be in first stage labor. Nine hours later she was delivered by low forceps as a means of shortening the strain of the second stage. The baby left the hospital in good condition.

This case presented several unusual features. The girl did not have the customary bloated appearance of the eclamptic. She showed no oedema except a slight swelling of the feet. The systolic blood pressure on admission was only 120, which rose after a few hours to 140. Her axillary temperature was 104.2 on admission and gradually receded to normal on the 5th day. The convulsions became much more frequent and severe after delivery. She had only two convulsions in the 9 hours preceding delivery and 18 during the first 24 hours post-partum.

There were no convulsions in the second 24 hours and two during the third day. The stupor of the first two days terminated in a post-eclamptic psychosis which made it necessary to transfer her on the 9th day to the psychopathic ward. Her treatment was begun by putting the patient under ether anesthesia, gas not being available at the time. Under the anesthetic her stomach was washed with soda solution and a saturated solution of epsom salts containing 5 drops of croton oil was introduced into the stomach before the removal of the tube. 315 c. c. of blood were removed by venesection. The bowels were irrigated with a 5% soda bicarb. solution, after which the anesthetic was discontinued. Later the patient was put into a hot pack. Morphine by hypodermic and bromide and chloral by bowel were used as sedatives. Soda was administered by mouth and by proctoclysis and on one occasion by intravenous injection. Four stomach feedings were given through the stomach tube during the second and third day consisting of peptonized milk containing

glucose and small amount of alcohol. She remained irritable and excited until the 9th day when she became unmanageable and jumped out of the second story window. Her injuries were slight. She was later returned to the obstetrical department from the psychopatic ward and was discharged from the hospital in good condition.

Normal Case—due to prenatal care.

Case No. 17 C. S. Hospital No. 49975, Dr. Mercer, Interne; Dr. Pickett, staff. Para 2.

This patient came to the hospital two years ago in violent labor. Fetus was dead and was lying in transverse position. Dr. Speidel extracted by Potter's Version. No cause was found for the faulty position at that time.

She presented herself to the prenatal clinic for care during her second pregnancy. Her measurements were good, between the spines 25, between the crests 27, external conjugate 22, and diagonal conjugate 12. However, this baby was also lying in transverse position. By external manipulation, the head was brought down and an L. O. A. position maintained by adhesive straps on the abdomen. She was kept in the hospital for observation. The straps were kept in place until the head was well fitted into the pelvis. A normal delivery was the result. The chances are that this baby would have shared the fate of the first but for the prenatal care which the mother received.

Treatment of Varicocele.—Ferrando describes Marenco's technic which has been applied successfully in twenty cases since 1916. The veins in the anterior bundle of the spermatic cord are resected for 3 or 4 cm., and the testicle, enclosed in its vaginalis, is drawn through a slit in the parietal layer of the serosa. The serosa is then inverted and a stout catgut thread is passed through each end of the wound. The testicle is restored to place and supported at the proper height, and the catgut is tied on each side and fastens it thus to the cellular tissue of the root of the scrotum, to Poupart's ligament, or to the rectus muscle. The testicle is thus left of good size and shape, held immovable at the proper height by a cicatricial envelop, and the stretched scrotum usually shrinks to normal size.

Law on Social Adaptation of the Mentally Backward.—Roubinovitch and Debray report very favorably on the results of this law. The patients earn as much as an average worker of their class. Although admitting that agriculture is to be preferred, the authors quote Rocher's observation that defectives from towns suffer in the country from nostalgia. They believe that the facultative law of 1909 has proved beneficial, and it should be made compulsory for these *arrieres perfectibles.*

ORIGINAL ARTICLES

CONGENITAL SYPHILIS.*

By C. Brooks Willmott, Louisville

Since the preponderance of opinion now regarding the child born suffering from syphilis is almost unanimous in the belief that infection takes place in utero, the expression "hereditary syphilis" must soon fall into disuse, the initial lesion, so to speak, being the placenta, treponema having been demonstrated both in the expressed afterbirth and in the site of its placental attachment.

The fact that some women have been infected by the seminal fluid of men, contended by Boardman, does not prove that the resulting fetus is infected through this agency, as it would seem difficult to understand how an ovum containing a treponema could develop. To substantiate this belief Glomset calls our attention to the fact that many other infectious diseases are transmitted by the mother through the placenta to the fetus.

Since mothers giving birth to syphilitic children almost always show positive Wassermann reactions, "Colle's law" must go into the discard with "Profeta's law," as these children, born of syphilitic mothers, formally thought to be immune to syphilis, frequently show a positive Wassermann although showing no active clinical signs of syphilis. It does not necessarily follow that all syphilitic parents beget syphilitic children. The given case of a father having contracted syphilis many years previous to marriage, even having little or no treatment, begetting healthy children which show no symptoms of the disease either clinically or serologically, may be explained by the mother having remained unaffected. Should the mother be infected and have active syphilis it would be most unusual for her to bear a healthy child.

The most marked effect of syphilis on the fetus is interruption of pregnancy or abortion, most infected mothers giving a history of numerous abortions. It is stated by Kassowitz that 40% of these pregnancies result in miscarriage. The first pregnancy is frequently noted to result in miscarriage, while the next child may be born dead, and the next die soon after birth.

Reasoning would naturally follow that conception soon after infection argues for a much worse immediate prognosis. The conclusions arrived at by Dr. J. Frank Fraser, Pathologist of Bellevue Hospital, after many years of extensive study, including hundreds of autopsies with minute study of all tissues and or-

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*Read before the Jefferson County Medical Society,

gans of the fetus in support of maternal transmission, are briefly: "From a review of antenatal pathology and embryology and the morphologic evidence in all cases of congenital syphilis, it would appear that infection takes place only after the fetal organs are formed, a fact which excludes the theory of germinal transmission unless we assume a practically unsupported theory of larval "inactivity" of the infecting organism."

From the facts reviewed, the most plausible explanation of the 5% residue of non-syphilitic and immune mothers of syphilitic children is that these mothers have a mild, low grade form of syphilis.

Frequency of congenital syphilitic infection varies from 3% in private practice to 8% and 10% in dispensary cases. Certainly many more cases would be seen if it were not for the fact that there are so many miscarriages and so many early deaths.

Formerly many congenital malformation, such as deaf mutism, flat foot, bone deformities, malposition of viscera, scoliosis, etc., were ascribed to syphilis, but recent investigation would tend toward the improbability of these dystrophies being caused by lues. A child is either syphilitic or non-syphilitic.

Ordinarily the child appears normal at birth, and it is usual for syphilitic manifestation to appear shortly after birth, varying from 8½% during the first week to 24% in the third week, receding to 17.7% the first month, increasing to 22% the second month. Naturally, there is no difference in the parallel stages of congenital and acquired forms. Systemic disturbances are more common in the congenital type, and loss in weight or failure to gain is a danger signal, as well as early rhagades from the corners of the mouth, and gummas appearing early in the second year. Epiphysitis is a characteristic osseous lesion of congenital syphilis, though osteitis, periosteitis, and dactylitis are fairly common. Osteochrondritis frequently results in the stunted growth of long bones and may be elicited by marked pain on pressure—the child often cries when handled. Cutaneous eruption tends toward the maculo-papular type, and appears most constantly on the buttocks and diaper region, while in the negro typical annular lesions may appear both on the face and body. Bulbous lesions, the so-called "syphilitic pemphigus," are quite rare, while condolomata about the perineum and anal regions are found frequently. The most common cutaneous complications are mucous patches, deformities of the permanent teeth, milk teeth never being characteristically deformed. Hazen recently described a suppuration of the tooth sack of the upper central incisors resulting in their exfoliation before being cut in a number of cases of the secondary stage in children, always limited to proved syphilitic children.

He has found caries a far more common factor, the neck of the teeth being attacked and eroded rapidly, the crown separating. This most often involves the upper central incisors, but may attack the lower as well, resulting in the child's being without upper central incisors from the age of two until six. The typical Hutchinson's teeth are always of the permanent set of upper middle incisors.

Very recently Dr. John S. Wall has called attention to most important changes which occur in the six-year molars. To quote Wall: "There is an erosion, not an erosion of wear only, but a disintegration of the grinding surface, to which this term is applied for want of a better one. This erosion is irregular in form, the surface of the molar for a third, half, or even the whole, is pitted, excoriated, and discolored. There is often a pulpy looking mass of dirty yellow color occupying most of the face of the crown, margined, as it were, by the line of the cusps ordinarily found on the molar teeth. The tooth has been called the "honey-combed molar of congenital syphilis," it has also been referred to in various clinics as "the mulberry molar," likening the worm-eaten center to the appearance of the tip of a mulberry."

The early nose symptoms are due to a prevalent rhinitis, so-called "snuffles," always interfering with nursing, resulting in permanent atrophy of the mucous membrane of the nose with erosion of the upper lip. Still claims that this condition is present in 70% of these cases.

This form of syphilis does not lead to the saddle nose, which is always the result of gummous changes, and may come on as late as the 20th year, in an apparently healthy individual.

The most important lung change found in stillborn syphilitic children, is the well known "pneumonia alba," first described by Virchow. The lungs are increased in size but nearly airless, the whole of both lungs may be involved or small areas of tissue. On cut sections the tissue appears firm and white or mottled grayish-red. Microscopically, examination shows no increase of interstitial tissue, but the alveoli are thickened, and there is marked infiltration of fixed tissue cells with the characteristic blood vessel changes always found in syphilis, large numbers of treponema being present.

Involvement of the liver is fairly common, being found by good observers in 40% to 60% of congenital cases coming to autopsy.

Drs. Fordyce and McKee have recently described characteristic syphilitic changes in

the pancreas of congenital syphilitics, and Still has found the spleen involved and palpable in 45% of his cases.

The most characteristic bone change is osteochrondritis already referred to, and Gauriants states that it makes its appearance usually between the ages of 8 and 13, is frequently bilateral, and the joints are affected in the following order of frequency: Knees, elbows, hips and ankles. The onset is insidious, claudication being the final symptom due to deformity from hyperostosis and effusion.

The kidneys no doubt are more often affected than believed, but give no such characteristic clinical symptoms as various other organs. However, autopsy and sections as described by Karvonen show arrested development, parenchymatous nephritis, hyperemia, interstitial nephritis, and gumma.

Study of involvement of the endocrine glands is yet in its infancy, but we have no reason to believe that any organ of the body escapes the ravages of syphilis.

Lancereaux states that the pituitary body may be enlarged and indurated in congenital syphilis and that either directly or through internal hydrocephalus "cause the adipose genital dystrophy of Bartels." Congenital syphilis may occur as the result of a direct invasion of the fetal nervous tissue by the treponema pallidum and the organisms are found in large numbers and with an ease markedly in contrast to what is the case in the nervous syphilis of the adult. Pure spinal syphilis, according to Nonne, is never found in congenital syphilis. The Hutchinson triad —deafness, interstitial keratitis and Hutchinson's teeth—when present is practically pathognomonic of syphilis.

Hydrocephalus ins comparatively frequent, being due to an accumulation of lymphatic fluid during intra-uterine life in the ventricles, and is accompanied by a syphilitic arteritis, its usual onset is from the 3rd to the 11th month. These involvements of the nervous system can be explained by the syphilitic toxins from the mother to the fetus, first coming in contact with the developing nervous system, causing various malformations and deformities.

Prognosis in congenital syphilis of the nervous system is on the whole bad by reason of defective development or malformation of the nervous tissue resulting in loss or impairment of function. In many cases there is actual destruction of nervous tissue which can never be replaced.

As regards treatment, there is practically no difference from the same symptom-complex in the adult. One should remember that infants showing symptoms at birth or shortly after are already in the secondary stage and that there are more organisms present. In the later stages there are not so many organisms present, but the body is in a state of allergy. In other words, a radical cure is probably impossible, such as can be obtained in the early stages of the acquired form.

The best treatment at present is thought to be arsephenamine and mercury. The iodides, having no power to kill the treponema, are considered useless. Mercury in the form of protoiodid in doses 1-6 grs. daily for a young child is still advocated, but inunctions of either the blue ointment—or personally I prefer a calomel ointment as it is much cleaner and just as effective—about 1 drachm is rubbed over the binder nightly before application, removed each day and the body washed intra-muscular injection of soluble salts, either the biniodid or succinomide may be used, dosage according to weight.

Arsphenamine and neo-arsphenamine are best administered with a syringe in a young infant, and as the smaller veins are difficult to enter successfully, the choice often becomes one of either the jugular or occipital which can be easily entered with a little practice. The dosage should be about 0.006 gram per kilo of body weight that is, about 0.025 gram for a child of 9 pounds. Personally I prefer intra-muscular injection in babies and young children.

Intra-muscular injections of arsphenamine in cocoa butter as furnished by Hynson, Wescott & Dunning, are efficient and have their advocates especially for larger children. In all cases the child should be wrapped tightly in a sheet to prevent struggling. As regards general treatment, the child should always be breast fed, as this gives a much better prognosis. Daily baths and good hygiene are advantageous.

Treatment of older children should be pursued just as in cases of acquired tertiary syphilis.

Before concluding this subject, I wish to emphasize the admonition of Dr. Henry H. Hazen, of Georgetown University, the eminent syphilographer, especially in involvement or suspected involvement of the nervous system.

"Any neurologic or psychiatric syndrome occurring in children must be suspected to be of leutic origin. It is true that the profession largely have abandoned the naive attitude towards the so-called upper classes in regard to syphilis, for which we have the Wassermann reaction to thank.

But no supposed impeccability of the parents, no negative previous history of the child and no failure to find Hutchinson's teeth or other stigmata, must cause us to eliminate lues from the etiologic possibilities, complete

serologic examinations are imperative and even when they fail us, energetic antiseptic treatment will often work wonders."

DISCUSSION

Wm. J. Young: The subject of congenital syphilis is one of interest to every practitioner of medicine. The general physician is more interested than the specialist, because the former is afforded the first opportunity of making the diagnosis; and, aside from prevention, early diagnosis is the most important item in congenital syphilis.

Quite a number of patients with congenital syphilis are seen in our syphilis clinic at the city hospital, and I have been especially interested in those with ocular manifestations. We have given a great many injections of arsphenamin and mercury injections in cases of this type, and it is remarkable the good results which can be secured where the ocular involvement is not too extensive.

In speaking of the prevention of congenital syphilis, I always think first of the obstetrician. It seems to me if anybody is at fault for the tremendous incidence of congenital syphilis it is the obstetrician. The pre-natal clinic at the city hospital has clearly demonstrated this. I make this statement because in the syphilis clinic we see many women in the various stages of gestation who are referred from the pre-natal clinic. I do not understand why the obstetrician in private practice should not examine these women carefully for evidences of syphilis, if necessary having Wassermann tests made. In this way I believe the incidence of hereditary syphilis could be markedly reduced.

So far as the treatment of congenital syphilis is concerned, we treat these children the same as we do adults, i. e., they are given arsphenamin in the buttock or the external jugular vein, and also mercury in the buttock. The intravenous method is sometimes difficult in young children because the vein cannot be located with certainty. Some observers give arsphenamin by the rectum in children and good results have been reported from that procedure. Personally I have had no experience with it.

In congenital syphilis preventive medicine is probably the most important factor, and we must depend largely upon the general practitioner and the obstetrician to secure reduction of its incidence by recognizing the disease early and instituting the requisite treatment.

It hardly seems necessary to add that every patient who has syphilis, whether it be congenital or acquired, should be given intensive treatment.

Frederick G. Speidel: I became especially interested in the subject of congenital syphilis recently by having come into contact with a case of this type in which some rather unusual features were presented. The actual date of parental infection was definitely known; the following month the mother developed an eruption on the palms of her hands which was pronounced syphilis by a competent observer and she coincidentally failed to mensturate; intensive treatment was given during the entire period of gestation, and she gave birth to a full-term-child who was apparently healthy in every respect. I might mention, however, that no Wasserman test was made at birth on the child's blood or spinal fluid; but the baby was pronounced non-syphilitic by a prominent syphilographer who treated the mother.

This child was brought to me about one year ago when twenty-one months old. According to the mother's statement the child had shortly before seen a member of the household in an attack of gall-stone colic, and had become frightened almost to the point of convulsions. Following this she became peevish and strangely irritable and lost the use of her left arm. After eliciting this history we insisted upon a Wasserman test of the blood and spinal fluid of the child; both were found four-plus positive. The spinal fluid also showed characteristic cellular and globulin changes.

The feature of particular interest to me was that the date of onset of the parental symptoms was absolutely known. The father acquired syphilis long after marriage; another child four years older than my patient was in perfect health. It was known that the father contracted spyhilis one month prior to infecting the mother, the latter occurring simultaneously with conception.

A few days after the child was brought to the office she developed complete left hemiplegia. Intensive treatment was commenced immediately and has been continued for over a year. A clinical cure has been effected, but serologically the child is not cured. The blood is still Wassermann positive with cholesterol antigen and icebox fixation; it is negative with alcohol antigen and water bath. There has been marked improvement in the spinal fluid picture; the hemiplegia has completely disappeared. Ultimately I believe the child will be serologically cured.

The method of therapeusis advocated by Jeans, of St. Louis, was followed. This consists in giving five milligrams of neoarsphenamin for each pound of body weight; four weekly intravenous injections are administered; then a rest for one month; the treatment is then repeated at the stated intervals for the period of one year. This child has received twenty-nine intravenous arsphenamin injections during the period of a year, totaling about four hundred grains of the drug. Mercury has also been given regularly by injection and by mouth.

Dr. Willmott stated that Profeta's and Colles' laws had been practically discarded since the Wassermann reaction test had been given such

widespread application. The fact remains, however, that these laws are based on clinical observations; it is known that a woman during pregnancy and lactation has a resistance to syphilis which holds in abeyance the development of clinical manifestations. It has recently been shown experimentally that in animals there is likewise a resistnce to syphilis infection, that many pregnant animals exhibit no signs of syphilis, either clinically or serologically until long after their offspring are born. Therefore it does not seem reasonable to suppose that routine Wassermann tests in pregnant women will bring to light all the cases of syphilis, nor that such tests will abolish the birth of syphilitic children.

J. Garland Sherrill: While Dr. Willmott's paper covers practically the entire subject of congenital syphilis, certain features in connection with the symptomatology deserve emphasis. The clubbing of the fingers, noted from the second to the fourth year, also the onychia which develops later in life, are always important indications of syphilis. The presence of cardiac lesions in young children who have not suffered from any of the exanthemata is usually syphilitic in origin, and this fact should always be borne in mind. Snuffles and eruptions occurring immediately or soon after birth are also suggestive signs of syphilis.

In the treatment of syphilis, congenital or otherwise, I believe mercury remains the sheet anchor. I am not opposing the administration of the arsenical compounds as they may be useful in causing subsidence of the clinical symptoms, but they may also hasten the course of the disease. For instance, in beginning aneurism of the aorta due to syphilis, where the spirochaetes are apparently lying dormant in the body, the disease is sometimes prone to progress with much greater rapidity after the use of arsphenamin. In other words, where the spirochaetes are for some reason held in abeyance, or where the disease is progressing slowly, following intensive arsphenamin treatment the patient with aortic aneurism is likely to suddenly progress to a fatal termination.

I believe mercury must still be used in the treatment of syphilis, and while inunction is the best method, good results may follow intravenous or intramuscular injections. Arsphenamin may be administered in conjunction with mercury, but I am doubtful about its curative effect. Iodide of potassium facilitates elimination of the mercury and also has a tendency to dissolve syphilitic products.

In children the presence of snuffles, eruptions, Hutchinson's teeth, cardiac lesions, clubbed fingers, onychia, all point to congenital syphilis. It must not be forgotten that syphilis may be present even with a negative Wassermann; in fact, many children with undoubted syphilis do not show a positive Wassermann. In syphilis of the liver the Wassermann is usually negative. If all suspicious cases, especially in children, are treated as syphilis, improvement will follow in the majority of them.

S. G. Dabney: My understanding of the matter is that our modern knowledge of syphilis explains Colles' law but does not by any means annul it. This law is that the mother is immune to infection by her own syphilitic infant, yet the same infant may infect any other woman who has never had syphilis and whose breast it nurses. That law still holds good and we now know that the reason for it is that the mother is already infected with the disease.

I have sometimes wondered if eye, ear, nose and throat specialists do not encounter more syphilis, both congenital and acquired, than those in other lines of work, excepting, of course, the syphilographer. I have certainly seen a large number of such cases. Speaking especially of congenital syphilis, I want to impress upon you the fact that people who marry a long time after infection are not apt to beget syphilitic children. I believe I am correct in saying that Jonathan Hutchinson, one of the greatest authorities on syphilis that ever lived, and whose clinical observations on this disease are unrivalled today, stated that if people would not marry until four years after infection hereditary syphilis would disappear. They may have syphilis for many years afterward, but transmission of the disease is exceedingly rare after the expiration of four years from date of infection.

Dr. Sherrill is, I think, mistaken in stating that snuffles are noted immediately after birth. This symptom does not usually appear until about six weeks after birth, when the mother notices that the child cannot get its breath while nursing, and that the nose seems to be obstructed. It is for this reason we are called upon now and then to treat children in the early stages of congenital syphilis. We rarely see them early because of ocular lesions. I have seen a few under six months old with eye lesions; iritis rarely occurs in infants. Children are usually brought to us with eye lesions due to hereditary lues between the ages of six and twelve years. The manifestations for which we are usually consulted is interstitial keratitis. An eye manifestation likely to be overlooked unless the oculist makes a careful examination with the pupil dilated, is inflammation of the choroid which may occur far outward near the periphery. A mistake all of us are apt to make is that we search for too many symptoms. The picture is not always complete; we do not by any means always find Hutchinson's teeth, clubbed fingers, snuffles, interstitial keratitis, and skin eruptions. Frequently only two or three of these symptoms are present.

An English oculist by the name of Moore has recently written a most excellent book on Medi-

cal Ophthalmology. In reading it I was particularly impressed with his statement that antiluetic treatment will not prevent the development of interstitial keratitis in a child with congenital syphilis. I confess that I had always been under the impression that if a child with congenital syphilis was given vigorous early antiluetic treatment, interstitial keratitis would not develop. Children with interstitial keratitis usually improve under vigorous treatment, but I have seen one or two that did not recover good vision. One eye lesion that syphilis never produces is corneal ulcer; but acquired disease rarely and the congenital often causes interstitial inflammation of the cornea.

In addition to what the essayist has said, I desire to emphasize the importance of the symptomatic triad of Hutchinson, viz., (a) total nerve deafness, (b) markedly impaired vision from interstitial keratitis, and (c) Hutchinson's teeth. So far as I am aware nerve deafness due to congenital syphilis cannot be cured by anti-luetic treatment. It is fortunate that such cases are rather uncommon.

An interesting feature observed now and then is delayed development of hereditary syphilis I have seen interstitial keratitis in people beyond the age of twenty years due to hereditary syphilis.

While the treatment of syphilis is out of my line, patients with eyes lesions due to this disease are seen quite frequently. Like Dr. Sherrill, I believe mercury is the sheet anchor in the treatment of syphilis. I have great doubt whether arsphenamin cures the disease, but it helps immensely abolishing symptoms. Iodine, iron and certain other drugs are also useful. Again, like Dr. Sherrill, I believe in giving mercury by inunction. While mercurial injections may be effective, yet I am a great believer in inunctions. Arsphenamin may be administered as an adjunct but mercury must still be accorded first place in the treatment of syphilis.

James W. Bruce: One of the most constant and persistent physical signs of congenital syphilis is splenic enlargement. Snuffles come and go; rash appears and disappears; epiphysitis is often transient; but splenic enlargement is constant. Any baby less than two years old with an enlarged spleen should be considered the subject of syphilis, and every effort should be made to prove the presence or absence of the disease.

Regarding the prognosis of congenital syphilis: Authorities are agreed that the mortality in infants with this disease is three to five times greater than in children who do not have it. These babies do not necessarily die from syphilis, but their nutrition is so impaired that they quickly perish from gastro-enteric disturbances, pneumonia, and various other affections. A child with congenital syphilis has only one-third to one-fifth the chance of surviving that a normal child has when attacked by some intercurrent affection.

With reference to treatment: I agree with Dr. Sherrill and Dr. Dabney that mercury is essential in the treatment of congenital syphilis. Neoarsphenamin is undoubtedly of value in abolishing symptoms, but mercury should be used in conjunction with arsenic and treatment continued over a long period. I also agree that inunction is probably the best method of administering mercury, but it is difficult to make the average mother understand the importance of rubbing what she calls "that dirty ointment" into the child's abdomen for the requisite length of time.

The injection of bichloride of mercury is becoming more and more popular in the treatment of congenital syphilis, and it is surprising what large doses these babies may be given without the production of renal lesions. Some authors give 1-20th of a grain weekly and claim to have observed no evidence of nephritis following this method. The urine should be examined at frequent intervals while the child is being given mercury. The administration of gray powder by mouth is also a good method, but bichloride by injection is probably the easiest and most effective way of giving mercury.

C. C. Maupin: I want to ask a question which I hope the essayist will answer in closing the discussion. Three months ago I saw a lady of thirty-six who had contracted syphilis from her first husband from whom she was later divorced. Prior to that time, however, they had two healthy children. She has now married a second husband who gives a positive history of syphilis.

This woman consulted a Louisville physician four months before I saw her, or about seven months ago, and was given intensive treatment consisting of six or seven injections of arsphenamin followed by mercury. At the expiration of four months she became totally deaf in both ears, and for that reason was referred to me. Intensive treatment was discontinued for a time and then resumed, but thus far there has been no return of hearing.

I would like for the essayist to tell us if he can whether the deafness in this case is due to syphilis or to the treatment.

Henry M. Reubel: Dr. Young attempts to hold the general practitioner and the obstetrician in a measure responsible for the incidence of congenital syphilis. When a woman comes for examination, to know whether she is pregnant, or at any other time during her gestation, she is usually accompanied by some female relative, which in itself precludes the possibility of a truthful account of her marital history. Instead of being accompanied by her mother or sister, I think she ought to bring her husband along, and even

then after careful questioning an entirely negative history of syphilis may not be obtained. What are we to do under such circumstances? Are we justified in telling every woman who comes for examination that she must bring her husband along so that a blood Wassermann may be made on both? That would be one way to reduce the incidence of congenital syphilis.

When either parent gives a clear-cut history of the presence or absence of syphilis, I have always considered that there must be some element of truth in the statement; but, according to Dr. Young, to complete the picture a Wassermann test should be made on both. Of course it is recognized that many fathers who denied syphilis have begotten syphilitic offspring.

It may be a difficult proposition to handle, but I am inclined to agree with Dr. Young that if the parents are willing a Wassermann test is certainly a wise procedure. This would undoubtedly enable us to reduce the percentage of congenital syphilis by early institution of adequate treatment.

C. B. Willmott (closing): I did not intend to create the impression that I depended entirely upon arsphenamin in the treatment of syphilis. It is a valuable remedy in that it causes prompt subsidence of clinical symptoms, but I thoroughly agree with Dr. Sherrill and Dr. Dabney that to cure syphilis we must administer mercury.

Referring to the question asked by Dr. Maupin: It occurred to me while he was speaking that his patient might have been deaf prior to the time she came under his observation. I do not believe the treatment he mentioned had anything to do with the production of deafness. Moreover, I would not consider the administration of arsphenamin over a period of four months as intensive treatment; nor would I consider mercury treatment intensive unless fifty to seventy-five injections had been given.

The most successful treatment of syphilis is the administration of arsphenamin supplemented with mercury. Arsphenamin may be given with safety every second day when conditions demand it.

Cerebellar Syndrome Resembling Multiple Sclerosis.—A case is reported by Howard which resembled both multiple sclerosis and the cerebellar syndrome called dyssynergia cerebellaris progressiva. Unlike the latter, there was a positive Babinski sign, cerebellar fits, greatly exaggerated tendon reflexes and an absence of vertigo. Sensory changes were present. Yet all the clinical manifestations of that condition, dyssynergia, dysmetria, hypotonia, adiadokokinesis and asthenia, as well as the intention tremor, were present. Howard believes that the case is probably one of atypical multiple sclerosis with more than the usual cerebellar involvement.

REMOVAL OF KNIFE FROM BEHIND ORBIT AFTER FIVE MONTHS. CASE REPORT.*

By Adolph O. Pfingst, Louisville

This boy has, as you see, a surgical scar in his left temple, and you will notice about 1½ inches from the external canthus, in the middle of the temple, a vertical scar barely a half inch long. This latter scar tells a tale.

In August of last year, while in a fight, a knife was thrust into this boy's temple at the point of the scar and the handle of the knife broken off. Strange as it may seem the boy had no symptoms and made light of what he thought to be a scratch on his temple. This was dressed by a druggist and healed rapidly. About a week after the injury disturbance of vision and inability to move the left eye brought the boy to the city hospital.

Examination revealed a divergence of the left eye and some deviation upward and inability to rotate in the opposite direction. The eye was totally blind. Outside of a possible pallor of the entire fundus the interior of the eye was normal.

Roentgen-ray examination revealed the knife blade which I exhibit extending across the left orbit, evidently below the eyeball and running slightly forward from the point of entrance in the temple. Surgical treatment was advised but refused. The patient did not return until January, about five months after the injury. Owing to his continued blindness and some recent dull ache in the left orbit he consented to an operation.

Under general anesthesia a large incision was made over the left temple downward to the temporal fascia, as is employed in the Kroenlein operation. The temporal and masseter muscles were divided at their attachment to the external angular process and the malar bone and the muscle tissue reflected. About one-half inch from the bony edge the end of the foreign body was exposed. It was firmly held in the bone and only a narrow piece was protruding. This was grasped with a pair of automobile pliers and was readily removed after loosening it with a twisting motion. It was an old rusty knife blade, almost two inches long and one-half inch wide. There was no reaction in the eye or orbit following the operation and the wound healed without incident.

The presence of a large foreign body transfixing the orbit with symptoms so slight that the patient did not suspect its presence is unusual—in fact almost inconceivable. The absence of suppuration in the presence of a dirty, rusty piece of steel is also noteworthy. However, the feature of greatest scientific in-

*Clinical report with exhibition of patient and roentgen-ray plate before the Louisville Medico-Chirurgical Society.

terest in this case is the rapid loss of vision in the absence of any pathology to account for it.

DISCUSSION

J. G. Sherrill: Dr. Pfingst has reported an interesting and rather remarkable case. The knife blade evidently did not sever the optic nerve, otherwise the vision of that eye would have been immediately destroyed.

I recall a similar case seen at the city hospital last year. A boy was shot through the orbit the bullet apparently lodging in the anterior ethmoidal cells. He had loss of vision and the question was discussed whether it would be advisable to leave the bullet in situ or make an effort to remove it. There was a temptation to attempt its removal through the nose, and I believe it could have been reached that way. However, as it gave rise to no trouble and there was little likelihood that vision of the opposite eye would become impaired, I finally concluded to leave the missile alone and await developments.

The question arose in my mind at that time, and oculists on the service were consulted about the matter, whether it was possible in case the optic nerve was injured behind the arteria centralis retinea, to accomplish suture of this nerve. My belief is it would be impossible to successfully suture this particular nerve, but it is an important question for consideration. So far as I was able to ascertain at that time failure was to be expected as the procedure has been tried and was unsuccessful.

It would be interesting to make a complete review of the case I have mentioned in connection with the one Dr. Pfingst has reported on account of their similarity.

Adolph O. Pfingst (closing): The chief point of interest in the case reported is the sudden blindness without changes in the fundus. We know that the arteria centralis retinea enters the sheath of the optic nerve 10 to 15 mm. posterior to the eyeball. Had the optic nerve been injured between this point and the eyeball, there would have been changes in the circulation, visible with the ophthalmoscope; whereas, if the injury had occured centrally to the entrance of the artery into the nerve, the fundus could have remained normal. As the radiogram shows the knife blade so far forward that we can exclude the possibility of a direct injury to the optic nerve, the only way in which we can explain the impairment of vision and motor disturbance is that a blood clot developed and pressed the optic nerve and muscles. After absorption motor disturbance was less pronounced.

In the case Dr. Sherrill has mentioned the nerve was probably injured behind the entrance of the arteria centralis retinea as impairment of vision was immediate and the fundus appeared normal although the possibility of a clot causing pressure can not be excluded.

In both of these cases atrophy of the nerve of the affected eye is developing.

ENDOCRINOLOGY IN RELATION TO MENTAL PROCESSES.*

By Hugh N. Leavell, Louisville

In any discussion of a theme regarding the mental processes, no matter from what angle we view them, we must ultimately come in contact with the basic organism, the cell. In animal life we are accustomed to define the cell as a nucleated mass of protoplasm microscopic in size and varying from 1-125 to 1-3000 of an inch in diameter. This basic unit of life possesses all the vital or physiological characteristics that the human mechanism as a whole possesses, having the power of response to stimulation, power of growth and nutrition, power of spontaneous movements, and power of reproduction.

For our present consideration we are concerned only with the power the cell has to respond to stimulation and its power of nutrition or trophism. The nerve cell is the most highly differentiated mass of protoplasm of which we have any knowledge. The higher in the scale of activity we go, or, in other words, the more complex and exact the work required of a nerve cell, the more nutrition it needs and the more easily are its functional activities influenced. Specialism of function required means the more specific must be the character of nutrition required to get the best activity of the cell.

Some physiologist has made the statement that a mass of brain cells deprived of blood for a period of seven seconds means the death of such mass. If this be true, then it is easily conceivable that a mass of nerve tissue in the brain may become "quite sick" or markedly influenced in its power to respond to stimulation or manifest its function, if the blood circulating therein be overcharged with toxicity or overstimulated with blood taken with material which has come from other portions of the body. The facts so well known that cell function is dependent on evenly balanced ration need not be reiterated. The nerves created to give the impression of light, such as the optic nerve, are so highly specialized and differentiated that only light or darkness will be the function manifested no matter how stimulated.

The point I wish to make clear in this brief discussion of the physiology of the cell is that there can be only one function produced when a nerve is stimulated, viz:—that for which that nerve was created. The Pacinian

*Read before the Jefferson County Medical Society, October 2, 1922.

corpusele can never transmit the wave of sound to the auditory nerve, no matter how delicately the harp strings are touched.

The duetless glands can manifest their effects, as stimulators of nerve cell activity, only through the eireulating medium of the blood; henee, a few words regarding the eireulation may be *a propos.* Only a very few years ago the medical profession was introdueed to the now much used and abused instrument the sphygnomonometer. Of eourse, we must ever recognize that the greatest funetional activity of any structure depends on the amount of blood and its character circulating therein. The fuller and tenser the blood vessels, the less absorption; hence, an evenly balanced tension means a better and more sustained functional aetivity of that part so supplied. Here again we have a factor in the ductless glands themselves which may so modify circulation of blood as to influence their own functional activity, as witness high blood tension in exophthalmic goitre. Likewise we see the effect of such high tension in the hyperactive brain cell. As an evenly balanced circulation means normal aetivity, so an evenly balanced endoerine function means normal brain cell function.

I wish now to diseuss the real meaning and interpretive action of endocrine function. There there are various times in our lives when we are more easily influenced by so-ealled age discrimination that the duetless glands influence over personalities. I am quite sure no one who has given this subjeet the briefest consideration will doubt. So much is this true, that I have deemed it a good plan to divide human life into certain endocrine epochs:

1st. The thymus gland epoch.
2nd. The pineal gland epoch.
3rd. The gland which gains the ascendeney at the end of the adoleseent period.
4th. The general decline of all gland funetion necessitated by ehanges in arterial structures.

Everyone knows the "sissy" boy and there is hardly any boy who doès not resent being called a "sissy." The thymus unquestionably holds in eheek the development of the gonads and may have a marked influence in the development of the child between the period of infaney and before the beginning of adolescence. It is not uncommon to see a boy of 16 wanting to play and seek the companionship of boys much younger than he. He is backward at school and while not strictly speaking a mental defeetive, yet his development is so slow that he is often placed in classes mueh below those usually in the eurriculum of the much younger. He "takes eold" easily, has a tendency to enlargement of the cervical lymph glands, has hypertrophied tonsils and adenoids. He is what some years ago was called the scrofulous, but more recently his condition is called the "status lymphaticus." He is the boy who faints easily, for instance during vaccination or some such slight injury. He is the anaphylactic and is likely to give trouble when serums are administered.

Chevalier Jackson describes a condition of obstruction on introducing the bronchoscope and the kesophagoscope and attributes it to enlargement of the thymus. A large set of elinical symptoms are described under the heading of "Mors Thymica" in which there is lack of development of the aorta, the muscular coat being unduly weak and early development of aneurism resulting therefrom. There is an inhibiting influence in the vasovasoeum and the arterioles are unable to respond to the influence of the sympathetic. Arterial tension is easily influenced.

The thymie boy is a weak lad and we seldom see him in line on the gridiron or track teams. It must not be thought, however, that the large thymus or the long continued effect of its inhibition means the dooming of a boy's life; he may suddenly start in his development and before the twenties make a well developed man. The thymo-centric is a distinct type, however, and from its ranks are recruited a large number of eases of dementia precox and allied mental delinquencies.

The various gradations of mental development may be noted when some other gland is gradually gaining the ascendency. We then have the thymo-adrenal, the thymothyroid and so forth, the gland which is mixing its secretion in the blood stream at the time giving to the individual the indelible characteristics peculiar to the gland itself. For instance, the boy who has been a "sissy" suddenly becomes eombative and argumentative as the adrenals pour their seeretion into the blood, or he becomes highly sensitive, nervous, sleepless as the thyroid adds its secretion, and so we have varying degrees of developmental influences. As the thymus regulates the development of early infancy and childhood so the pineal takes eharge where the thymus leaves off and we have the individual ushered into the period of adolescense, the so-called danger period of the development of fixed traits and characteristics which shall make the person start his real life's career.

Llewellys F. Barker of Johns Hopkins says "more and more we are forced to realize that the general form and the external appearance of the human body depends to a large extent upon the function during the early developmental period of the endocrine glands. Our

stature, the kind of faces we have, the length of our arms and legs, the shape of the pelvis, the color and consistency of the integument, the quantity and regional location of our subcutaneous fat, the amount and distribution of hair on our bodies, the tonicity of our muscle, the sound of the voice, and the size of the larynx, the emotions to which our exterior gives expression, all are to a certain extent conditioned by the productivity of our glands of internal secretion."

The internal secretions constitute and determine much of the inherited powers of the individual and their development. They control physical and mental growth and all the metabolic processes of fundamental importance. They dominate all the vital functions during the three cycles of life. They cooperate in an intimate relationship which may be compared to an interlocking directorate. A derangement of their function, causing an in sufficiency of them, an excess, or an abnormality, upsets the entire equilibrium of the body with transforming effects upon the mind and the organs. In short they control human nature, and whoever controls them, controls human nature. The control of the glands of internal secretion waits upon our knowledge of them, the nature and precise composition of the substances manufactured by them, and just what they do to the cells.

Man as a distinctive organism is the product, the by-product, of a number of cell factories which control the parts of his make-up, life, body and soul emerge from the activities of the magic ooze of their silent chemistry precisely as a tree of tin crystals arises from the chemical creations started in a solution of tin salts by an electric current. Stop, you say, this puts a materialistic view on all mind actively. The imagination of the poet and the sterling thoughts of the great statesman and philosopher are but the ooze of glands. Every ego becomes only a product of a secretion. To prove my point I would like to ask the question: how many doctors would testify in court that a man is capable of making a will when his body is surcharged with the products resulting from faulty metabolism in Bright's disease? No man whose secretions are not working well can think and act quickly and consecutively as the opposite. If this be true, and we know it is, then why should not a personality be built from brain cells which are being fed by a properly secreted hormone? If pathological thoughts result from pathology, why should not physiological thoughts result from physiology?

Mental defectives may be divided into three classes: First. Traumatic, Second, formative, and Third, functional. This third and the most important group is the functional type. In cases of this type the brain cells are not lacking in number, but there is a disturbance in the proportion of the different chemical factors in the surrounding medium from which the cells draw their necessary potential energy and activating substance, and therefore the cells do not react to normal stimulation. The point at which an incoming impulse will explode the unstable protoplasm within the cells, thus turning the potential energy therein into kinetic energy an outgoing impulse, is called the threshold of functional activity. If there exists a normal chemical balance in the blood, and therefore in the cell, this threshold will be normal. If there exists a chemical unbalance or disturbance, then the threshold may be either raised or lowered. Under conditions of chemical disturbance this threshold may figuratively be compared to that of various grades of explosives. Gunpowder, for instance, is fairly stable, dynamite explodes more easily, and T. N. T. has a still lower threshold. It must be borne in mind that a normal threshold has a more or less constant level. If the threshold is raised above this level, the cell response is less active: indeed, the threshold may even be raised to the point where the cell will not respond to outside stimulation. In a similar way, the lowering of the threshold below the normal level will bring about a condition in which the cell will respond to impulses that ordinarily would not cause a reaction.

One of the chief causes of a lowered threshold is a disturbance of the internal secretions. For example, a lowered threshold is found in persons in whom the thyroid substances of the body are increased. A marked instability of the cells is affected and explosive reactions will result from incoming impulses which in normal circumstances would hardly produce any reaction. Likewise, when the thyroid substance is deficient, a person will not respond normally and keenly to an incoming impulse which in normal circumstances would cause a response, because the threshold of functional activity has been raised.

What is true of the thyroid is also true of the adrenals, pituitary, and other gland secretions, though their action has not yet been as fully determined as that of the thyroid. Interference with the functional activity of the cells and emotional instability may also result from the introduction of foreign toxins into the system. These toxins may not only affect the threshold of functional activity, but may also create a disturbance of the internal secretory glands.

Both toxins and the chemicals in the blood act selectively on the various centres of the nervous system. Ether, for example, select-

ively involves the higher centres of cerebration, raising the threshold to such a point that incoming impulses cause no reaction, thus producing unconsciousness; but, at the same time, it does not equally affect the nerve cells of the respiratory and circulatory centers, thus permitting those centers to respond to incoming impulses and allowing the person to live. So we see that a chemical disturbance in the blood may affect the functional activity of one or more centres of the brain making them either more unstable or stable.

We have long since shelved the book on psychology which divided the human mind into "the intellect, the sensibility, and the will." We still know that the wish is father to the thought, but we must now admit that the progenitor of the wish is influenced by the kind of stuff that feeds the brain cells; or, in other words, the instrument from which it is made.

There is another thought which in this connection I wish to "get across," and that is that no matter how well tuned the piano is a bull cannot play it. No matter how well our secretions are organized and harmonized, how well fed our brain cells are, there is a factor which enters into the mental make-up of every individual, and that is environment or contact with each other. Here again, however, our reaction to this environment or point of contact depends on the character and calibre of the brain cell itself. If it be not well fed and properly stimulated then it simply does not function, does not think. Of course in this connection I am referring to the conscious or subjective mind, the subconscious being only a subcellar or storehouse of mental impressions. The subconscious can only work out to a logical conclusion all the material which is handed to it and can never generate its own impulse of thinking any more than a cell in the optic nerve generates sight without a retina. Now, some one says what's it all about. In conclusion let me summarize by saying:

1st. That the cell is the basis of life.

2nd. That the circulating blood controls cell nutrition.

3rd. Its response to stimulation depends on its food.

4th. The ductless glands pour into the blood stream their curious and ever active secretion.

5th. The glands regulate our personality.

6th. As a man thinketh so is he.

DISCUSSION

W. E. Gardner: I always feel some hesitancy in discussing a paper concerning the internal secretions, because there is so much being written on the subject at this time that it is difficult for one to draw any very definite conclusions. The more we read on the subject the greater becomes our confusion because of the conflicting theories.

Dr. Leavell's paper is broad and shows familiarity with the best literature on the subject. I agree with him that the consensus of opinion now is that the thymus and pineal glands are probably most active in childhood before the advent of puberty. I think possibly his theory is true that where we see female characteristics in the young adult male it is often attributable to increased activity of the thymus gland. On the contrary, however, a great many authorities claim that this is a posterior pituitary disturbance; in other words, that the male develops feminine characteristics, and the female shows masculine characteristics, because of some pituitary disturbance. For instance, where a young woman has a masculine voice, excessive growth of hair about the body, masculine tendencies, etc., it has been quite generally conceded that these characteristics are due to pituitary disturbance, and that feminine characteristics in the male are due to a similar cause.

While I was in New York last summer and talking to a member of the staff of the neurological institute, I asked if they were all as enthusiastic as Dr. Timmer on the subject of the internal secretions, and he replied that they did not know, that so much was being written on the subject of the internal secretions, much of which was contradictory, that no definite conclusions could be formulated. A work in four volumes had recently been published on this subject, he said, but much of it was devoted to discussion of theories which have been found more or less incorrect, mainly in regard to the therapeutic effect of the internal secretions, that after all little new information was given which was tangible and really helpful so far as therapeusis was concerned.

I do not believe we have accomplished very much in the line of organotherapy except in early life. As remarked by Dr. Leavell, in childhood the growth of the body and also the mental development of the child undoubtedly depends a great deal upon glands of internal secretion, especially the thymus and pineal; yet in clinics where a large number of patients showing mental defects have been studied and who have been given extracts from these glands over a period of years, very little seems to have been accomplished. In a few cases which have come under our personal observation where the patients showed mental defects we started with pituitary extract, and are now giving pituitary combined with thyroid and thymus extracts. Whether this treatment is going to have any effect we do not know, but theoretically it should have especially in young children.

So far as the administration of glandular extracts in acute mental disturbances during the

active period of life is concerned: I have tried these in a great many instances and have not been able to discover any therapeutic value. I believe in many instances where there seems to be some disturbance of the internal secretions we can accomplish more by placing the patient in the proper environment and insisting upon rest than by the administration of organic extracts. In certain well defined cases, however, when we can say positively that a particular gland is at fault, then we know theoretically at least that the extract of this gland should be given.

We also know that under certain circumstances we should not administer a particular gland. For instance, if a patient has hyperthyroidism we know that thyroid extract should not be administered. If we have a patient with acromeglia where we believe the pituitary gland is hyperactive we know that we should not give pituitary extract. Yet it is known that in a great many cases where there was originally hyperthyroidism after a certain time the individual will exhibit symptoms of hypothroidism. So after all much of our information is purely theoretical and our therapeutics of uncertain value. Many beautiful theories have been advanced and while they remain theoretical propositions I believe in the course of time something more practical will be developed. When that time comes we will be able to accomplish something from a therapeutic standpoint that is really worth while.

R. Alexander Bate: Endocrinology has made manifest much that is new. Dr. Leavell is to be congratulated upon his choice of subject. Endocrinosis, or the functioning of the glands of internal secretion, determines both physical and mental processes from the cradle to the grave. And by their endocrines "shall they be known." Dysendocrinosis establishes the pathological type. If inherited it constitutes diathesis; just as physiologic endocrinosis determines temperament or the "peculiar physical character and mental cast" of an individual.

Autacoid imbalance of childhood consequently is a timely study. Much confusion arises because hormones or excitants, and chalones or inhibitors are embraced under the term autacoid or chemical messenger. Thus the suprarenal hormone is believed to liberate sugar from the liver into the circulation. The chalone from the Islands of Langerhans is supposed to inhibit this sugar output. The posterior pituitary seems to activate whichever is needed as often observed in its control of both amenorrhea and metrorrhagia. It is easy to observe the possibility of confusion in sugar metabolism. A too active suprarenal hormone would produce the same clinical glycosuria as a too inefficient chalone from the Island of Langerhans.

Sajous, twenty-five years ago gave us much that is now "new" to the profession. Mental precocity has been observed in pineal overfunction. Hyperthyroidism and hypothyroidism each have physical and mental manifestations quit characteristic and easy of diagnosis.

Dementia precox and a host of mental symptoms are reported benefitted by thyroid therapy. A patient of my own receiving two grains of thyroid substance three times daily, for certain physical characteristics last year obtained the mark of best average in a school of near two thousand pupils.

Halion's law that the secretion of a gland stimulates a similar gland to further activity can be understood if we bear in mind that autacoids are being administered.

Hugh N. Leavell (closing): Some of the points mentioned in the discussion are important but could not be included in the paper because of the limited time. I realized fully that it would be impossible to do justice to the subject in a short paper.

It is a well known fact that human beings possess certain glands which regulate their functions; that women are the products of the postpituitary, the thyroid, the adrenal medulla; that males are the products of the thyroid, anterior pituitary, adrenal cortex. I do not believe there is a physiologist in the world who will dispute that statement. The female varies toward the masculine type just in proportion to the degree of interior pituitary and adrenal cortex function; likewise the boy varies toward the feminine type because of dysfunction of the anterior pituitary lobe. It is not uncommon to see a tall, slender young woman with small mammary glands, resembling the masculine type. On the other hand, we often see in the same family a female of short stature, large, well-formed limbs, breasts, etc. We may rest assured in the latter type that the posterior pituitary gland began to functionate early and regulated developmental conformation. If time permitted many cases could be cited to emphasize what has just been said.

It is undoubtedly a fact that certain of the endocrine glands regulate the stature of the individual, just as they control the tone of the voice, size of the legs, etc., and there is no question in the world that these glands also regulate the personality of the individual. Much has been written along this line and to discuss every phase would require many hours. The subject is so interesting and fascinating that it behooves each and every one of us as physicians to investigate the matter thoroughly before condemning any of the claims made by endocrinologists.

I am in hopes that someone will take the four volume work on endocrinology mentioned by Dr. Gardner and condense it, eliminating all obsolete theories and uncertain propositions, so that

it may appear in a small book. The fact remains, however, that endocrinology is such a tremendously large subject that anyone who undertakes to include all that is actually known in a small volume will have a difficult task.

Imbalance between the various ductless glands is the real crux of the whole situation as Dr. Bate has said. Lack of balance between these glandular secretions causes deficiencies of various kinds; one individual may have deficiency in stature, another deficiency of brain matter, and so on. It does not require an endocrinologist to make the diagnosis of hyperthyroidism; everybody knows that the thyroid is capable of producing excessive secretion which results in the highly nervous type of individual, with tachycardia, nervous tremors, and all the other manifestations which accompany hyperthyroidism. If that be true is it not also a fact that the ductless glands exerting their functions in like manner may control stature, muscular development, the amount of hair on the body, and various other peculiarities? I do not believe there is any question about it.

As to the question of mental disturbances being due to endocrine imbalance: I saw a statement recently that ninety per cent of the men who were in the late war showed signs of being mentally defective. It is claimed that those who were "shell-shocked" are mentally defective because of endocrine imbalance. I believe there is some truth in this statement.

The nervous and other phenomena noted in the menopause of women are certainly produced by imbalance of endocrine action. No one longer doubts that the placenta is an endocrine organ and functionates as such; that during utero-gestation the moment that the posterior pituitary assumes control at that moment the placenta becomes loosened and the child is born. This shows that there is an activating substance in the pituitary gland which has control over the placenta, but the placental secretion holds in check pituitary action until a certain point has been reached. The headaches so often seen at the beginning of the menopause are pituitary in origin; we are all familiar with the pituitary headaches during childhood; and the headaches noted at the beginning of menstruation are also pituitary in origin. The sella turcica may not be well developed and the pituitary gland is compressed; or the pituitary gland may be overgrown so that the sella turcica cannot accommodate it and pituitary headaches develop. There are many affections which may be explained on the basis of endocrinology if one will closely study the symptomatology.

FOREIGN BODY IN THE EYE.*

By J. J. Wynn, Louisville

Theo. S., aged 18 years, came to me on May 4, 1921, with the following history: While working on a metal punch press two days previous he felt something strike his right eye. It caused severe pain at the time, but as the other workmen could not see anything in the eye, he continued at work that day and the following one, by which time the pain and inflammation were so severe that he consulted his family physician who referred him to me.

Examination showed marked ciliary congestion, iris congested and muddy, pupil contracted and inactive to light, aqueous cloudy with some hypopyon, tension was normal by palpation and there was no iris prolapse. Vision was reduced to counting fingers at two feet, due no doubt to the cloudy aqueous.

Atropine 1% solution was ordered to dilate the pupil, and he was sent to have a roentgen-ray examination made, which showed a small foreign body in the posterior chamber on the temporal side of the eye.

He was then sent to the hospital for extraction of the foreign body with the magnet. Under local anesthesia a small incision was made through the conjunctiva to the sclera, about 4-6 m.m. behind the sclero-corneal margin, and the sclera incised with a Graefe knife. The electrode was applied directly to the edges of the wound, and after considerable effort during which a small amount of vitreous escaped, the piece of metal was removed, and the incision closed with a conjunctival suture. The eye was dressed the following day and atropine used every 2 hours to combat the iritis resulting from the injury. The inflammation gradually subsided, and by June 1, the eye was free from inflammation with a dilated pupil and vision of 20-20 due to a traumatic cataract which was developing.

In September the lens opacity had increased and continued to do so until by October it was practically complete, with vision reduced to light perception and projection. On January 13, 1922, he was again sent to the hospital for extraction of the cataract, which was done in the usual manner, with an iridectomy, and irrigation of the anterior chamber for the removal of some soft lens matter. The lens was delivered easily without vitreous loss, and he was put to bed with a binocular bandage. He made an uneventful recovery leaving the hospital in 10 days with the eye free from inflammation. On February 3, a thin posterior capsule was needled, after which he had vision of 20-20 with + 12 Ds; this was prescribed, with +. 50 Dc ax 90 for

*Read before the Jefferson County Medical Society, November 6th, 1922.

the other eye which glasses he has worn ever since.

This case was interesting to me because of the slight pain resulting from such a serious injury and that the patient continued at work for two days after the accident, showing the need of careful examination of the eyes in any injury for the possibility for a foreign body, as he would have undoubtedly lost the injured eye and there would have been danger to the other one had not the foreign body been found and removed.

DISCUSSION

S. G. Dabney: Dr. Wynn is to be congratulated on the excellent result he obtained in the case reported. I wish he had been a little more specific in telling us the location of the foreign body and also where his incision was made. In removing foreign bodies from the eye I have always considered it safer to use a general anesthetic. Dr. Wynn probably had good reasons for using local anesthesia in the case reported.

I have perhaps seen more than my share of cases of foreign bodies in the eye. The prognosis in such has been tremendously changed since advent of the roentgen-ray, and a large proportion of the patients, even where the foreign body had remained longer in the eye than stated by Dr. Wynn (two days) have recovered useful vision. The reason for this increased success is that the roentgen-ray locates nearly every metallic foreign body exactly and also shows its size.

In the removal of foreign bodies from the posterior part of the vitreous chamber I sometimes dissect the external rectus to lessen tension and freely expose the sclera; and in my practice have never failed to remove the foreign body, although the eye has been lost in a number of instances. I recently made this statement before a meeting of our specialists society, and one of my colleagues told me later "that it caused him to go back and make another attempt to remove a metallic foreign body from the eye and this time he succeeded."

One of the most interesting cases of this kind I have seen was a man brought to me from central Kentucky. I was told that he had a piece of steel in his only remaining eye, the other having been destroyed when a child by the kick of a horse. Twenty-four hours before I saw him a piece of steel had been driven into his only remaining eye. This made the case of greater interest and it was extremely important that vision of his remaining eye be preserved.

A roentgen-ray examination was immediately made by Dr. D. Y. Keith, who has never yet failed to tell me the exact location and size of the foreign body. In this case it was far back in the vitreous. Three hours later the man was in the hospital, a general anesthetic was administered, and the foreign body removed. Fortunately the man did not develop traumatic cataract and afterward had vision of 20-20.

Another case was seen in consultation with a colleague who asked me to come to his office. I found there a man of thirty who had received a blow on his eye and also thought a foreign body had entered. His vision was almost perfect, there was but little redness and no pain. By the way, pain is a most deceiving symptom in these cases and its absence is by no means unusual. Although nothing was shown by the ophthalmoscope, I expressed the opinion that the man might have a foreign body in his eye and a roentgen-ray examination should be made.

The roentgenologist informed us that there was a foreign body in the eye and described its exact location and size. I was requested by my colleague to assist in the operation for removal. He used a magnet, and, failing to remove the foreign body, asked me to try it; my efforts were also attended by failure. As the patient's vision remained practically normal, I telephoned the roentgenologist that I thought he had made a mistake, that there was no foreign body in the eye, as I had never before failed to remove one when present. A second roentgenogram was made and the foreign body was shown in the exact situation previously described by the roentgenologist.

Six months later the doctor in charge of the case informed me that the eye was blind, painful, and he had decided to remove it, which of course was the proper thing to do. After removal the eye was brought to my office and the doctor stated: "you thought there was a foreign body in this eye, and so did the roentgenologist; I have brought it here for you to open and determine." The eyeball was incised and there was a small piece of tin exactly where the roentgenogram had shown it.

One day several years ago I received a telegram from a gentleman in a city in Tennessee, asking if I would be in the office the following day. I replied in the affirmative, and the next day the father and his son of about twenty-eight appeared. The father stated: "I have brought my son to see you because he has a foreign body in his eye, we think it is a piece of steel, and it has been there a week; the doctor in Tennessee wanted to remove the eye yesterday, and I telegraphed you from his office."

The patient was sent to Dr. Keith who told me after roentgen-ray examination exactly where the foreign body was and its size. A piece of steel had been driven through the crystalline lens producing traumatic cataract. I made my incision, as I generally do, far backward on the temporal side and freely exposed the sclera. To make a long story short, the foreign body was easily removed and the boy recovered useful vi-

sion. The cataract was needled later and vision of 20-40 was obtained in an eye he had been told should be removed. I wrote the Tennessee physician fully about the case and received a very courteous letter from stating that he was glad I succeeded in saving the boy's eye, and that the roentgenologist in his city failed to locate the foreign body. This case illustrates the importance of having a roentgenologist who is competent and can correctly interpret his plates.

I could relate many other interesting cases of the type under discussion, but have already talked too long.

C. C. Maupin: I want to compliment Dr. Wynn on his success in his case. He was exceedingly fortunate to remove a foreign body from the eye, and perform lens extraction for traumatic cataract, and secure vision of 20-20.

In practically all cases of foreign body in the eye we must decide quickly just what plan of management will be best for the interest of the patient. The treatment will depend somewhat upon the location of the foreign body; the site of the incision is also an important item as stated by Dr. Dabney.

I believe wherever possible the foreign body should be removed. Many of the patients are sent to us for enucleation, but we succeed in removing the foreign body and thus save the eye.

Where traumatic cataract develops either the needling operation or lens extraction may be done if the patient is young.

J. J. Wynn (closing): In the case reported Dr. Keith located the foreign body in the outer, lower quadrant of the eye. The foreign body was a very small piece of metal. The first roentgenogram taken antero-posteriorly failed to reveal the foreign body; but the second one taken laterally showed the foreign body on the temporal side.

Local anesthesia (cocaine) was used in this case as the patient seemed to possess good nerve, and I thought it would be easier to keep his head in proper position by this method. He suffered no discomfort during the operation.

My incision was made behind the sclero-corneal margin, thus avoiding the dangerous zone of the eye. The foreign body was removed without difficulty with the magnet.

The question arose whether the cataract should be treated by needling or extraction. I decided in favor of the latter because extraction can be performed at one sitting, whereas needling may require several seances. No difficulty was encountered in removing the lens in the usual manner.

HEPATIC ABSCESS, CASE REPORT.*

By L. Wallace Frank, Louisville

Mr. J. C., aged forty-seven, was referred to us by a physician in an adjoining town in August, 1922, on account of an abdominal tumor. He gave a history of having had a sore on his penis seventeen years ago. He said he did not consult a doctor at the time but used some powdered calomel and the sore healed in six weeks.

The physician who sent the patient here said roentgen-ray examination of the gastro-intestinal tract was negative; that the blood Wassermann was reported by the state laboratory as one-plus positive. The history further showed that the man had become progressively weaker, and that during the last six months he had noticed a gradual enlargement of the liver. There was some jaundice, slight pain at times in the liver region not sufficiently severe to indicate gallstone colic.

Physical examination revealed an enlarged liver which extended six inches below the costal margin, apparently limited to the right lobe; there was increased dulness in the epigastrium; the spleen was not palpable. We at first thought there might be a renal tumor, but the urine was negative except for a slight trace of bile. Bimanual examination disclosed that the mass occupied the right loin and was slightly painful to pressure from the front.

When we first saw the patient his hemoglobin was 43%; erythrocytes 3,000,000; leucocyte and differential count normal. The tumor was not especially tender to pressure nor was it distinctly nodular, although some gross irregularity was noted. We had a blood Wassermann made which was negative.

The physician who had the patient under observation before sending him here, based on the reported one-plus positive blood Wassermann, had given him two intravenous injections of arsphenamin; mercury and iodide of potassium had also been administered. The patient was referred to us with the presumptive diagnosis of carcinoma of the liver.

The Wassermann having become negative under anti-leutic medication, we thought he probably had syphilis, although the liver had not decreased in size. We accordingly made the diagnosis of gumma of the liver and sent the patient back to his physician with the recommendation that vigorous anti-syphilitic treatment be given.

The man later returned to Louisville and told us that under treatment his liver became about one-half its former size. Pain then developed in the liver region and within two

*Clinical report before the Louisville Medico-Chirurgical Society.

weeks the organ again became markedly enlarged.

Based on this later history of course we had to revise our diagnosis. Carcinoma could be excluded, and we think syphilis also, and we decided then that the man either had cystic disease of the liver or a hepatic abscess of amebic origin. When he appeared the second time he had lost fifteen pounds in weight; hemoglobin was reduced from 43% to 30%; erythrocytes 2,500,000.

Under local anesthesia we made a two inch incision over the liver and introduced an aspirating needle evacuating a large quantity of brownish colored pus. A trocar was then inserted through the opening, a catheter placed in the abscess cavity, and the abdomen closed. The patient was so weak and anemic that we thought a general anesthetic might be hazardous. After operation he was given one transfusion of whole blood.

The patient is now about ready to leave the hospital. The abscess is still draining but there has been a wonderful improvement in his physical condition. His hemoglobin is now 70%; erythrocytes 4,000,000; and he is recovering his weight and strength.

Following operation we had the feces examined on numerous occasions for amebæ but none were found. His past history was carefully reviewed, he was asked whether he had ever lived in the south, whether he had ever suffered from dysentery, etc., to all of which he replied in the negative. Examination of pus removed through the trocar showed no amebæ.

DISCUSSION

J. Garland Sherrill: One of the most impressive diagnostic clinics I ever attended was given by the late Dr. Ouchterlony a number of years ago when I was interne at the hospital. A patient living in this locality, who had never been in the south, presented with a tumor in his right side most prominent just below the sixth rib. According to the history the tumor had gradually increased in size. The patient had more or less constant temperature elevation after admission in the hospital.

Quite a number of physicians had seen the patient none of whom had been able to arrive at a diagnosis. Dr. Ouchterlony, who saw the patient for the first time in the clinic, made the diagnosis purely by the process of exclusion. He excluded one factor after another and finally announced the diagnosis as follows: "This patient has an abscess of the liver; we will introduce a trocar and will find pus." This proved to be correct.

Tumors or swellings involving the liver are not always easy of diagnosis. Some time ago I exhibited before the Jefferson County Medical Society a man who had a large tumor connected with the liver which extended below the umbilicus. The mass was pyriform in shape with apex downward. He had been examined and operated upon a year previously in another city, the procedure being abandoned because of the diagnosis of hepatic carcinoma. When he came here I had the advantage of knowing that he had lived a year longer without material change in his condition, and therefore decided that carcinoma could be excluded and made the diagnosis of liver syphilis notwithstanding a negative Wassermann. A positive Wassermann was never obtained in this case. In investigating the literature at that time it was found that about sixty per cent of patients with liver syphilis fail to show a positive Wassermann. This is an important point to consider in making the diagnosis.

In regard to amebic abscess of the liver: It has been demonstrated by a number of observers during the last few years that it is unnecessary for an individual to have lived in the south to have an amebic abscess or amebic dysentery. The amebae are present in this climate but not so frequently as in the south. Patients with abscess of the liver usually have some temperature elevation. We can readily understand that these abscesses may form and in a short while the contents become sterile; moreover, pus withdrawn from an amebic abscess of the liver does not show amebae unless a scraping is made from the liver tissue. The pus is bloody, distinctly mouse-like in odor, and is tenacious or sticky; in other words, the pus seems to contain considerable mucus. I have seen quite a number of these abscesses and have demonstrated,—sometimes in the living and sometimes in the dead—the presence of amebic dysentery. It is claimed by Dr. G. S. Hanes, and I think he is perfectly right, that amebae are rarely found in the feces unless scrapings from an intestinal ulcer are examined under the warm stage. Dr. Hanes' method of inverting the patient enables the observer to scrape an ulcer of the lower intestinal tract and obtain material for examination. If an individual suspected of having an amebic abscess of the liver is fed on fruits for a short time amebae are more readily found.

Echinococcus cysts of the liver are infrequently observed in this part of the world. People in Iceland or other northern countries where large amounts of raw meats are eaten often have echinococcus cysts. They sometimes drift into this country. Ferguson, of Chicago, has reported thirty cases of echinococcus cysts of the liver. In such cases the eosinophiles of the blood are always increased; and palpation elicits a peculiar fremitus not noted in other types of cysts.

L. W. Frank (closing): We realized, of course, that examination of the pus in the case reported for amebae was not reliable, because as Dr.

Sherrill has stated to obtain the parasite the abscess wall must be scraped.

When this man returned the second time the feature which impressed me was that under anti-syphilitic treatment the liver at first became smaller and later increased to its former size. A liver which extends six inches below the costal margin and well into the right iliac fossa must be considered very large.

The possibility that this man has a disintegrating gumma of the liver cannot be positively excluded, and "we are going to play safe" by giving him both emetine and anti-syphilitic treatment. I am aware of no contraindications to use of the two measures at the same time. If the man has an amebic abscess the emetine will be useful; if he has syphilis arsphenamin and mercury are certainly indicated.

ABDOMINAL AORTIC ANEURISM: BRIEF REVIEW OF SIX ABDOMINAL AORTIC ANEURISMS, IN TWENTY-EIGHT ANEURISMS FOUND AT 1062 AUTOPSIES.*

By E. R. Gernert, Louisville

Crisp[1] puts the occurrence of abdominal aortic aneurisms fourth in the list of aneurisms and occurring 30% as frequently as thoracic aortic aneurisms; while Keen[2] puts the incidence of abdominal aortic aneurisms to thoracic aortic aneurisms as 1:7 up to 1:2, depending upon the geographical locations. Also the abdominal aortic aneurism occurring most frequently in the prime of life, eleven times more frequent in men than women, more common in negroes, and most frequently in neighborhood of celiac axis.

In 1062 autopsies at Louisville City Hospital, 28 cases of aneurisms were found, 6 of which were of the abdominal aorta. Of these six, there were three in males and three in females, all negroes, ages 34 to 53; all had plus Wassermanns, all in region of celiac axis and only two were diagnosed anti-mortem and one of these not until patient had been admitted to hospital for third time, due to obscure findings.

The aneurism herein reported occurred in a married woman, colored, aged 53 years.

L. R. Was admitted to hospital September 30th, 1922.

Family History: Negative.

Past History: On June 6th, 1917, admitted to hospital complaining of pain and soreness in left iliac region. Vaginal examination revealed hard mass attached to uterus. Vaginal hysterectomy done for removal of leiomyoma.

On February 2, 1918, admitted to hospital complaining of pains in back and dragging sensation. Had been very excitable and restless. Operated upon and abdominal and intestinal adhesion broken up and stump of cervix sutured to abdominal wall.

On August 18, 1922, admitted to hospital complaining of pain in left lumbar region, which has been continuous for past two weeks. Worse after heavy meals. Has nycturia and occasional frequency. Slightly movable mass in left abdomen. Wassermann -|- -|- -|- Cystoscopy shows bladder ulcerated, bleeding and having a tubercular nature. X-Ray shows destructive process involving first and second lumbar vertebrae. Diagnosis: T. B. of spine; T. B. of kidney (?).

Present Illness: Complains of pains in left side, especially noticeable on slightest exertion. Pains radiate to left inguinal region and have become more severe in last six months. Has poor appetite, sleeps poorly and has lost weight.

Physical Examination: General appearance that of a fairly well developed, poorly nourished, black female. Thorax: Heart and lungs negative. Abdomen: Old scar in midline, below umbilicus to symphysis pubis. Bulging in left abdomen in nipple line extending about four inches below costal margin. On palpation freely movable, hard, non-fluctuating mass, 2 inches in breadth and extending downward from beneath ribs for about 3 inches, is felt in left abdomen. Dullness on percussion in this area. Spleen and kidney not palpable unless above described mass is kidney or spleen. Auscultation reveals no bruit.

Laboratory Findings: (a) Urinalysis: Alkaline, 1.024, negative. (b) Blood Count: R. B. C., 3,860,000; W. B. C., 8,300. Differential: Polymorphonuclears, 62%; lymphocytes, 35%; eosinophiles, 2%; endothelial leucocytes, 1%. Hemoglobin 80% (Talquist). (c) Feces: No occult blood. (d) Blood Chemistry: Non protein nitrogen, 27.27; urea nitrogen, 13.64. (e) Proctoscopic examination: Reveals no apparent abnormality in large bowel. (f) X-Ray (10-9-22) Left kidney apparently somewhat enlarged, the upper pole being on a level with the second lumbar vertebra. Pyelogram apparently normal. (10-12-22) Pneumoperitoneal examination reveals right kidney apparently normal in size, but low in position, lying between transverse processes of second and fifth lumbar vertebrae. Injected gas is not seen in the left half of peritoneal cavity, possibly due to marked pressure produced by tumor mass in this side. (g) Cystoscopy: Bladder capacity 500 cc. Mucosa normal. Orifices normal. Urine from both sides equal in amount and microscopically negative.

(From the Department of Pathology, Louisville City Hospital and University of Louisville, Medical Department).

*Read before the Jefferson County Medical Society.

On admission temperature was 98.6 degrees; pulse 100, respirations 30. Blood pressure 102-72. October 13, 1922, patient sent to operating room with diagnosis of tumor of left kidney. Usual oblique incision was made over left kidney. A large mass which was fusiform in shape was found lying just lateral to and against the spinal column. Distinct pulsation obtained on palpation of mass. Considerable hemorrhage encountered. Some dark clots of blood were removed from around the mass posteriorly. Kidney found lying anteriorly upon pulsating mass and apparently normal in shape and size, but markedly ptosed and lying anteriorly, being thus displaced by the mass posteriorly. A diagnosis of possible aneurism of abdominal aorta was made and incision closed. Patient died six days after operation.

Autopsy (A 22-87) performed three hours post-mortem.

Body is that of a poorly developed, and poorly nourished black female adult. Boggy mass is palpable in entire left abdomen. In left lumbar region is a fresh, oblique incision, 95 mm. long, apparently clean.

Peritoneal Cavity. Greater omentum adhered to abdominal wall by scattered fibrous adhesions. Entire lower left abdomen up to celiac axis is filled by a sub-peritoneal mass 20x8x5 cm., dull purplish gray, smooth and boggy. Splenic flexure and 125 cm. of descending colon are on top of mass just a little to left of median line. Remainder of intestinal tract is in right abdomen and pelvis. Lower pole of left kidney 7 cm. below celiac axis in median line on top of mass and extends obliquely upwards into left abdomen. On a line with celiac axis and extending upward for 80 mm. is a bulging of 28 mm. which extends into right abdomen from lateral part of aorta to posterior abdominal wall and spinal column. On left side of aorta in corresponding region is a similar bulging 78x50 mm. Superimposing upon and adhered to the lower portion of this mass is the large, purplish mass previously described.

Kidneys. Weight: Right, 120 gms.; left 130 gms. Left kidney pale purplish gray. Cortex 9 mm. thick and fairly well differentiated from medulla. Pelvis clean. Capsule adherent and leaves a granular appearance on stripping. Right kidney similar to left in all respects.

Genital Organs. Uterus missing. Left oviduct 85x65 mm., very tortuous and fluctuates. Lumen contains clear straw colored fluid.

Aorta. Abdominal aorta is streaked with slightly elevated ridges and similar placques. 20 mm. above celiac axis is an opening with smooth edges, 21 mm. in diameter on posterior wall of aorta which communicates with a cavity filled with organized blood and blood clots. Cavity has for its walls the walls of the two masses previously described in region of celiac axis. The 12th dorsal and 1st, 2nd and part of 3rd lumbar vertebrae form part of posterior wall of sac. Vertebrae are eroded to extent of communicating with spinal canal. Cartilages also eroded. Mass at left of aorta in region of celiac axis has an opening at its base 30 mm. in diameter which communicates with sub-peritoneal mass filling left abdomen. Latter mass is filled with blood clot and has for its walls the distended peritoneum, left side of spinal column and posterior abdominal muscles. Muscle including an area upward from sacrum to left of spinal column, measuring 100x60 mm., are rough and rugged and expose incision mentioned above, in left lumbar region.

ANATOMICAL DIAGNOSES

Ruptured aneurism of abdominal aorta.
Chronic aortitis.
Hydro-salpinx, left.
Incision left lumbar region.
Abdominal adhesions.

Discussion of Case: This case reported is interesting because of the difficulty in diagnosing abdominal aneurisms and the lack of clinical findings in the case. The extensive amount of laboratory work done, which threw no direct light upon the diagnosis. As to diagnosis, a very difficult problem presents itself. About the only points which would lead to a diagnosis are: (1) Visible pulsation in epigastric region. (2) Palpation of a definite expansile, pulsating tumor. (3) X-Ray which confirmed or ruled out aneurism. (4) Bruit.

Prognosis: The terminal course is grave. Death may result from: (a) Complete obliteration of lumen by clots; (b) compression paraplegia; (c) rupture which occurs in 60% of cases; (d) embolism.

Treatment: Unsatisfactory. Surgical.

REFERENCES:
1. Crisp-Osler's Practice of Medicine, 1919 p. 849.
2. Keen's Surgery, 1910, Vol. V-p. 312.
3. Osler's Practice of Medicine, 1919-p. 860.

DISCUSSION

Charles Farmer: Aneurism of the abdominal aorta is an exceedingly difficult proposition to handle from a diagnostic standpoint. In the majority of instances the diagnosis is not perfected until the patient is operated upon or necropsy performed.

I would like to report a case recently coming under my observation: The patient was a woman eighty years of age. One month previously the family physician had discovered a left-sided painful abdominal tumor, about on a level with the umbilicus, and brought the patient to me.

Physical examination confirmed the diagnosis of a pulsating abdominal tumor which was

thought to be extra-peritoneal. The woman was not a favorable surgical risk, especially on account of her age, and I advised against operation. She returned to her home in the country after being informed that we were unable to decide just what should be done. She continued to complain of pain and insisted that something be done for her relief. The physician again brought her to Louisville, and upon opening the abdomen we found an aneurism of the abdominal aorta beginning at the bifurcation of the celiac axis. Of course nothing further was done. The operation was performed sixteen days ago and while the patient seems to be improving she still has pain. Considerable pulsation was noted in the tumor but there was no bruit.

M. Casper: Twenty years ago, when I was interne at the Louisville City Hospital, we had on the service three cases of abdominal aortic aneurism. I have never seen one since. Such cases are rather rare in private practice, but many of them have been seen in the city hospital. I suppose this is on the account of the number of colored people admitted nearly all of whom have a positive Wassermann reaction.

I recently noticed an abstract of an article published in one of the foreign journals stating that a surgeon had resected the abdominal aorta for aneurism and performed end-to-end anastomosis the patient living forty-eight hours. I can find no other reference to such a radical procedure in the treatment of abdominal aneurism. From a surgical standpoint we have the introduction of wire and many other methods without much success. I think, however, in the course of time some way will be found to anastomose the abdominal aorta successfully. The surgeon in the old country deserves to be congratulated for his partial success.

John K. Freeman: In any discussion of abdominal aneurism the greatest interest centers about the diagnosis. We ought to be more careful in our study of these cases. The general practitioner often is very quick to criticise the surgeon for diagnostic errors when should exercise greater care in making his physical examination. If the physician would listen carefully over the tumor and study the physical findings and when he discovers an abdominal mass, with a damaged heart, etc., early diagnosis of abdominal aneurism would oftener be made. If we depend too implicitly upon the roentgen-ray report we are apt to be misled. The x-ray does not always show us things which we know to be present. In a case I saw not long ago if I had relied on the x-ray I would have made a mistake. In the case reported by Dr. Gernert the roentgen-ray did not show the presence of the aneurism; it will not always show tubercular foci, nor all fractures and dislocations. I do not say this to belittle the work of laboratory men, but they are sometimes too positive in their statements as to the presence or absence of certain lesions. We must not forget that careful physical examination is more important than laboratory findings. If the laboratory findings are in accord with the physical findings we may be more certain of our diagnosis.

BILATERAL CONGENITAL ABSENCE OF RADIUS.*

By L. P. Spears, Louisville

The following case is reported and the roentgenograms exhibited because of the comparative rarity of such anomalies. I have seen the patient only once and then not because of the condition which I shall describe.

I was called in an emergency to see a child in convulsions and found he had a temperature of 105 degrees F. The intestinal tract was thoroughly emptied after which the fever subsided and the child was well the next day.

During my visit I noticed a peculiar deformity of each arm, there being considerable shortening of the forearms, with marked adduction at both wrists, giving the hands the appearance of feet; there was also a large amount of fatty tissue apparently on the outer side of each wrist joint. On questioning the family I was told that the child had no radius in either forearm, and inasmuch as such an anomaly is rather rare I thought it might be interesting to exhibit the roentgenograms. The child is now twenty months old, weighs thirty pounds, and has never been ill for a day except on the one occasion mentioned.

The parents have had this child at the Johns-Hopkins Hospital and the x-ray pictures were made there when he was one month old. They took him to Dr. Lorenz for examination when he was in this country. The child has been under the care of Dr. Billingsly, of Nashville, Tenn.

The only procedure recommended by any of the surgeons who have seen the patient has been the application of an apparatus to prevent deformity. Dr. Billingsly said he first applied a plaster cast from the fingers to the axillae, but during the last few months he had extended it only to the elbows. It impresses me that, as the child weighs thirty pounds and is only twenty months old, the tissues are probably so soft and flabby that the placing of a plaster cast on the arms is about like "trying to wrap a charlotte russe in paper."

I referred the patient to Dr. W. B. Owen and am sorry he is not present to tell us what he thinks would be the proper treatment. I

*Clinical report with exhibition of roentgenograms before the Jefferson County Medical Society, December 11th, 1922.

think some form of apparatus, with extension to prevent or overcome the extreme adduction at the wrists, would be the proper thing to do.

So far as I can ascertain there is no other case on record of congenital bilateral absence of the radius. It is not so unusual for one bone to be absent anywhere about the osseous system. For example, I have under observation a patient whose right ring finger is absent. Bilateral absence of bones, as in the case reported, seems to be quite a rarity.

DISCUSSION

M. Casper: There is only one point I wish to discuss, and that is the frequency of bilateral anomalies. I believe it is a fact that an anomaly of this kind is more apt to be bilateral than unilateral. Several cases have been reported where there was absence of both humeri, the forearms being attached at the shoulder. Doubtless we have all seen such illustrations in text books. The congenital absence of ribs, supernumerary ribs, cervical ribs, etc., are usually found on both sides. The same statement is true of anomalies of the blood vessels, nerves, etc. I think bilateral defects are the rule rather than the exception.

Frank T. Fort: Developmental defects, such as mentioned by Dr. Spears, are always interesting. My opinion is that very little can be done by treatment in the correction of such anomalies. Deformity might be prevented, at least to some extent, by the application of a splint or possibly some other type of apparatus could be devised which would be more advantageous. When the child is six or eight years old it might be advisable to stop further growth of the ulna by removing the diaphysis. This would give the child a short forearm, but it would be strong and useful.

While in Baltimore during the recruiting period a young man with both forearms deformed was accepted for service. His arms were very strong, but not more than half the normal length from the wrists to the elbows.

My advice would be to treat this child expectantly with some form of apparatus, adhesive strips or suitable splint, to prevent deformity, and when he comes six or eight years old to stop the growth of the forearms as already stated.

John K. Freeman: It is very discouraging to present a case record before this society and ask for suggestions as to treatment without obtaining any information. However, I would not be too pessimistic about the case reported. Deformed children sometimes develop and become useful citizens. I am aware of a watchmaker in Louisville who was born without hands, yet he is successful at his trade.

After all about the only thing we can offer Dr. Spears is a few words of encouragement. I would simply suggest that he take good care of the child and allow him to develop.

I cannot understand how Dr. Fort could stop the growth of the forearms unless he also stopped the development of the child.

CORNEAL ULCER IN A DIABETIC, CASE REPORT.*

By Leon K. Baldauf, Louisville

A young woman with diabetes was frying something in her kitchen one day and a drop of hot grease struck her in the eye. She went to an eye man, three or four days later and it was found she had a corneal ulcer. He examined her carefully and said he could not determine what was the cause of the ulcer. Finally he asked if she was the subject of any constitutional disease and she said yes that she was a diabetic.

The condition of her eye progressed from bad to worse, swelling increased, and it looked like she would lose her eye. She had a large percentage of sugar in the urine and her blood sugar was also high. About the time she was gotten sugar free under diet and treatment, insulin was obtainable, but we did not use it. After she had been sugar free for about a week the corneal ulcer disappeared.

I would like to ask Dr. Dabney to say something about the treatment of corneal ulcers when associated with diabetes.

DISCUSSION

S. G. Dabney: As I understand it, in Dr. Baldauf's case, there was a traumatic corneal ulcer, and the severity of it was doubtless due to diabetes, but the origin of the ulcer was trauma. I do not believe diabetes is ever responsible for the development of corneal ulcer. It would necessarily make a corneal ulcer very much more grave. Diabetes does produce some very interesting ocular troubles, the most familiar being retinitis,—the so-called retinitis diabetica. In this type of retinitis the typical star-shaped arrangement of the white spots around the macula is not noted; the white spots in diabetes are more diffuse and often larger than in true retinitis. Diabetes may produce weakness or paralysis of the oculo motor nerve and sometimes paralysis of some of the external ocular muscles. Diabetes also produces iritis.

*Clinical report before the Louisville Medico-Chirurgical Society.

HYPERTHYROIDISM.*

By B. W. Bayless, Louisville

The percentage of enlarged thyroids is quite variable in different localities. Of 21,182 young men examined at Camp Lewis 21% showed thyroid enlargement. Of 65,507 young men examined at Jefferson Barracks 1.63% showed enlargement, and of the enlarged glands 10.8% showed toxic symptoms. The latter group were from fifteen states, and the enlargement varied from 1% to 38% from the different states. Of 609 women examined at the University of Illinois 45.3% had enlarged thyroid glands, 85% of these were between sixteen and twenty-one years old and 15% between twenty-one and thirty. This shows a wide range in the percentage of enlarged thyroids, from 1.63% in men to 45.3% in women, and toxic symptoms occurred in from 10% to 13% of the enlarged glands.

Hyperthyroidism is characteristic of two conditions of the thyroid gland; viz: toxic adenoma and exophthalmic goiter. Before an adenoma shows symptoms of hyperthyroidism a simple adenoma is present, but an exophthalmic goiter may develop rather rapidly without any previous enlargement or symptoms.

In exophthalmic goiter there is hypertrophy and hyperplasia of the thyroid gland. Exophthalmus is only seen in cases with hyperplasia and with hyperplasia there is always an over-secretion of the gland.

In adenomatous or colloid goiter not associated with hyperplasia exophthalmus will not develop.

Patients notice simple or adenomatous goiter at a much younger age as a rule than an exophthalmic, and the former may exist for a long time without giving any symptoms other than the enlargement. However, a patient with an adenomatous goiter may develop hyperthyroidism in time or may develop hyperplasia and then show all the symptoms of an exophthalmic goiter.

The time of development of hyperthyroid symptoms is of very much shorter duration in an exophthalmic than in an adenomatous goiter. An adenoma may be present for years without symptoms of hyperthyroidism while an exophthalmic may develop marked symptoms in a very short time.

Normally the vesicles of the thyroid hold some colloid after being secreted by the lining cells and it gets into the circulation by passing back through the secreting cells (Bensley).

In an exophthalmic goiter there is hypertrophy and hyperplasia and the secretion passes directly into the circulation, there is no storing of the colloid. Wilson, (L. B.) says the symptoms of non-exophthalmic hyperthyroidism are caused by absorption of complete thyroxin secreted in previously stored colloid but more slowly than in exophthalmic goiter. Stored colloid does not contain thyroxin and the colloid is transmitted from the follicles to the circulation. In true exophthalmic goiter the symptoms may be caused by incomplete elaborated thyroid secretion, the secretion passing directly into the circulation.

Frequently when the thyroid shows dyscrasia there is also a more or less complete endocrine dyscrasia.

There are a number of symptoms both subjective and objective of hyperthyroidism, some are present in nearly all cases while others are not so frequent. The most important symptom is nervousness, it is present in practically every case and is accompanied by weakness and easy tiring both mental and physical. Acceleration of the pulse even after resting one half hour or more is noticed. Hypertension is present in adenoma but not in the exophthalmic goiter.

Palpatation of the heart with shortness of the breath is quite noticeable especially on exertion. This is the result of the myocardial changes due to the increased thyroid secretion (thyroxin). The presence of a tumor is not characteristic of hyperthyroidism and is not a factor as to its function; there may be a marked hyperfunction and yet the gland may be only slightly larger than normal. There is loss of weight, which in some patients is quite marked, even though their intake is more than their normal, this is on account of the high basal metabolism. There is a tendency to perspire. Tremor of the outstretched fingers is a common symptom and in some cases a slight cough is noticed. Exophthalmus is a later symptom and is not present in the toxic adenoma.

The most important laboratory test is determination of the basal metabolism. An increase of more than 10% is evidence of hyperfunction while a minus 10% is evidence of hypofunction. The basal metabolism is positive in about 90% of hyperthyroid cases and is usually higher in the exophthalmic than the toxic adenoma. Other laboratory tests are determination of the sugar tolerance and the Kottmann reaction which check with the clinical findings in about 75% of the cases. The Goetch test is also valuable.

Plummer terms a hyperfunctionating adenoma one that is slow developing with increase of metabolic rate, but no ocular change and is very frequently nodular.

Wilson divides true exophthalmic goiter into three stages. (1) Early stage, with mod-

*Read before the Louisville Medico-Chirurgical Society.

erate increase in basal metabolism, often moderate exophthalmus, moderate thyroid enlargement, moderate hyperplasia and diffuse hyperemia of the gland. (2) Advanced stage, with high metabolic rate, marked exophthalmus, marked nervous syndrome, marked thyroid enlargement, advanced hyperplasia, diffuse hyperemia, but little if any stored colloid. (3) Late stage, with high but sometimes declining metabolic rate, marked nervous syndrome and there is now marked colloid storage with less hyperemia. The gland is usually not nodular.

The treatment of hyperthyroidism is medical and surgical. In the majority of cases medical treatment should be given a fair trial before resorting to surgery. Medical treatment consists of rest in bed, suitable diet and the x-ray.

Good results are obtained in 75 to 80% of cases after medical treatment. The x-ray causes an atrophy of the secreting cells of the gland and limits the amount of thyroxin secreted. There are scarcely any deaths following roentgen irradiation and the few that have been reported seem to have been due in part to some complication. Some surgeons have mentioned finding adhesions after roentgen treatment while other say they have never found tissue changes which have made the operation more difficult. Many who have experimented with animals have found no such adhesions. If the treatments are given too close together in advanced cases an increase of the hyperthyroidism may result.

In several sudden deaths after thyroidectomy a persistent and at times unusually large thymus was found, so it is a good plan to ray the region of the thymus as well as the thyroid.

If it is necessary for surgical intervention after raying the thyroid the general condition of the patient will at least be improved and there seems to be no doubt that mortality from the surgical operation has been materially lessened by antecedent irradiation. In the great majority of cases the thyroid returns to normal size, the metabolic rate becomes normal, the nervous symptoms subside more or less completely, and the vascular symptoms also unless there has been permanent injury to the heart.

The surgical treatment consists of ligation of the superior thyroid arteries, thyroidectomy or sometimes the arteries are ligated preliminary to thyroidectomy.

In adenomatous goiters the operative mortality is about 1.5%, in exophthalmic between 2 and 3%. The percentage of cures in the adenomatous type is about 83, and in the exophthalmic 77.

The results in both the medical and surgical treatment are about the same, with the mortality much less in the medical, and there is no operative shock in the medical treatment. The immediate results are not so marked in the medical as in surgical treatment, but it is not necessary for the patient to be confined to bed unless the symptoms are marked.

It is claimed thyroid hypertrophy in children represents a defensive reaction to the lack of iodin, and the gland returns to normal size when iodin is supplied in physiological amounts; so Marine, of Akron, Ohio, has given children minute doses of iodin over long periods and it seems to have a tendency to prevent goiter.

DISCUSSION

John Walker Moore: It would be hard to say, especially in the presence of surgeons, just what procedure should be followed in the treatment of exophthalmic goiter. I dare say that medical men would be very glad to refer all patients with exophthalmic goiter to the surgeon if they could consistently do so, because in the majority of instances the disease is far advanced when patients are first seen, and it is doubtful whether any form of treatment will do any good. I have had under observation four patients of this type during the last month; morphine and bromides were administered to keep them quiet; no improvement occurred and all of them finally died. It is in such cases that I think the roentgen-ray would be the ideal method of treatment, but, like other procedures, there is danger of stimulating the formation of more thyroxin and this would cause an increase in the symptoms.

As to the basal metabolism in these cases: while we believe metabolism measures the thyrotoxicosis it does not tell us whether or not the patient can be safely operated upon especially in cases of exophthalmic goiter. There are periods of remission and exacerbation in this disease and if the patient is examined during the declining wave the rate of metabolism is usually low; but the effects of toxin or thyroxin on the heart and other structures of the body are such that the patient is a poor operative risk, and that is the cause of the high mortality. In some of these toxic cases there is a marked increase in the metabolic rate. It is usually safe to say that with a low metabolism, rapid pulse and enlarged heart that the greatest operative risk occurs, and it is in such cases that I think the roentgen-ray has a place. As to whether or not patients treated with the roentgen-ray and those treated by surgery will derive the same degree of benefit, we will have to wait and see. Means and Aub have followed some of their patients six or seven years and found the percentage of cures about the same under roentgen-ray treatment as from surgery and the mortality as less by the former method. At the city hospital we have tried the roentgen-ray treatment in several

cases of both young and elderly individuals. From a morbidity standpoint the method has been satisfactory. However, the patients are still nervous, the exophthalmos remains, and I question very seriously whether the roentgen-ray will be the final procedure in these cases. The city hospital type of patients are not really proper cases for roentgen-ray treatment for the reason that it requires a long peiod of time; the most of them are working people and of course while the expense of the city hospital means nothing to them they are never received on the outside, they are of no value to the community because they are more or less invalids; the least disturbance or excitement causes the pulse to rise; nervous symptoms increase; infection especially of the respiratory tract is prone to occur; and it is a question in my mind whether or not the roentgen-ray is a good method of treatment in such cases.

C. D. Enfield: My own interest in the treatment of hyperthyroidism is of course mainly from the x-ray standpoint. There is a wide divergence of opinion among surgeons and clinicians as to whether radiation treatment has any real value in this condition. A few months ago I saw a communication from the Mayo Clinic stating that they had "seen no benefit from Roentgen-ray treatment in hyperthyroidism." At the other extreme is the report of Doctors Means and Aub, giving statistics of cases treated by x-ray which compare most favorably with any surgical statistics. I suspect that the experience of most of us lies somewhere between these two extremes. I doubt if many physicians today would have the temerity to say that they had seen no benefit from radiation.

Doctor Moore's comment on the City Hospital type of case is probably just. These people for economic reasons must have something quick, and x-ray certainly does not act quickly, at least with the usual technic. I have had a moderately extensive personal experience in the x-ray treatment of hyperthyroidism with results which encourage me greatly. Most, but not all, of the cases have been rather mild. Improvement has been the rule rather than the exception, and in some cases we have felt that we had produced a clinical cure. We feel that we can tell after three or four treatments whether the case in question is one that is going to respond favorably. If no indication of favorable response occurs at this time we are quite willing to agree that the case is one unsuited for radiation therapy.

In the mild or moderately severe case, x-ray therapy undoubtedly offers a very definite chance of improvement, if not of clinical cure. It will be worth while to look at the results of any form of treatment entirely without bias.

J. Rowan Morrison: My experience has been that some patients with hyperthyroidism have been materially improved by roentgen-ray treatment. In other instances by the institution of roentgen-ray therapy the patients have been gotten in better condition to withstand the operation of thyroidectomy.

I believe from my experience, which has been limited compared with the Mayo Clinic and the Louisville City Hospital, that the x-ray has been of material benefit in getting hyperthyroid patients in condition to withstand later operative intervention. Whether these patients would have fully recovered without operation is a question I cannot answer.

Dr. Moore made a remark which I think should always be borne in mind, i. e., that while the basal metabolic test is extremely valuable it is not always a guide as to the safety of operability of the case. With a rapid heart action and low metabolic rate the patient has reached a stage where operation may be fraught with considerable danger.

The roentgen-ray has undoubtedly been of some value in the treatment of hyperthyroid cases and should be encouraged especially as a method of treatment preliminary to surgical intervention.

Wm. J. Young: The discussion seems to have drifted in the direction primarily of the treatment of hyperthyroidism. My interest in the subject is principally from the standpoint of the roentgen-ray and radium. There are three methods of treating hyperthyroidism by means of the roentgen-ray. First, with fractional doses in which a very small dose is given every two weeks; second, a larger dose given every three weeks; third, massive doses repeated every seven or eight weeks. All of these plans have been used in some cases with good effects.

It seems to me the treatment of hyperthyroidism is in a rather chaotic state. Any method used, whether it be the roentgen-ray or surgery, is to some extent unsatisfactory. Dr. Enfield stated that the Mayo clinic had practically abandoned the use of the roentgen-ray in the treatment of hyperthyroidism. As we all know the Mayo clinic is primarily and essentially a surgical clinic, and they are not apt to give much support to either the roentgen-ray or radium. On the other hand we know other places in this country have reported excellent results from roentgen-ray therapy in hyperthyroidism. I do not believe the technique has been developed to the point where it is entirely satisfactory from a roentgen-ray or radium standpoint. Personally I have treated cases of hyperthyroidism with fractional doses withouth securing the desired results, then used different technique with satisfactory outcome. It has been my custom to begin with small doses and gradually increase them if necessary. I believe rest is a very important item in the treatment.

It has been claimed by certain surgeons that the roentgen-ray increases adhesions and fibrosis about the thyroid and thymus glands when this

method of therapy is used. I think that idea has been disproved and should be discarded. I merely mention this fact to show what the roentgenologist has to contend with in his work. In trying to perfect a technique by which we can secure better results obstacles are thrown in our way and prevent our work gaining a foothold.

The use of the roentgen-ray in the treatment of hyperthyroidism is increasing, and while good results have been secured, we hope to evolve and standardize our technique which will put our work on a more satisfactory basis.

L. W. Frank: There are two types of goiter cases in which hyperthyroidism occurs, viz., in toxic adenoma and the exophthalmic. We do not know whether those who advocate roentgen-ray therapy have been in the habit of dividing their cases into these two groups, but certainly it should be done. We believe it is the general opinion of many prominent radiotherapeutists that toxic adenoma of the thyroid should not be subjected to this form of treatment. To our mind adenoma of the thyroid, toxic or otherwise, is a surgical disease and should be so treated.

Regarding the x-ray treatment of exophthalmic goiter much can be said pro and con. However, as the previous speaker has said, very little definite information exists as to the proper dosage or requisite technique. Consequently we see cases of under-treatment with no benefit and in others actual stimulation of the gland occurs with its resulting overwhelming toxicity, cases of which we have observed. In others treatment has been over-done and myxedema results. Furthermore, the effect of the roentgen-ray on the gland is slow and the continued toxicity with its injurious effect on the myocardium may cause myocardial degeneration and weakness even though the patient be ultimately cured of the hyperthyroidism as gauged by the estimation of the basal metabolic rate.

It has been the experience of many surgeons that roentgen-ray treatment increases the periglandular fibrosis and that the adhesions noted at subsequent operation are more difficult to separate. In our experience the gland capsule has been definitely thickened following x-ray treatment. Operation, however, is apparently not rendered much more difficult.

Only a short time ago Wallace of San Francisco advocated the use of radium emanations in the treatment of exophthalmic goiter. He states that the greatest objection to the roentgen-ray is that little is known regarding dosage. In the series of cases reported by him, in which the capsules containing the emanation were buried into the thyroid lobes, there was destruction of gland tissue with increase in fibrosis and density of adhesions. He used the radium treatment as a preliminary to operation in desperately ill cases, and states that it is less dangerous, the effects more marked, and the peri-glandular adhesions less, than following roentgen-ray treatment.

We believe that the treatment of exophthalmic goiter is distinctly surgical. We can gauge the effect of the surgical procedure employed much more accurately than can the radiotherapeutist. It has been stated that the effect of one course of x-ray treatments corresponds in its effect to the ligation of one superior thyroid pole; consequently to obtain results treatment must be prolonged over a number of years, and in such cases the continued toxicity must necessarily cause damage which may be permanent. It is our belief that to obtain cures thyroidectomy must be performed.

In presenting a discussion on this subject the economic view must not be overlooked. In the wealthy where prolonged rest can be obtained, and time has no value, the roentgen-ray can be employed. Unfortunately the greater number of cases of hyperthyroidism occurs in that class where time is of value and speedy recovery is to be sought for financial reasons alone. In such surgery offers the quickest, the most certain and complete cure.

Occasionally cases are encountered in which a persistent thymus may be the cause of failure to respond to surgical treatment. We have seen one such and after treatment with the roentgen-ray the thymic shadow disappeared with subsidence of symptoms.

Morris Flexner: In my opinion there is no group of cases where clinical judgment plays such an important role as in disease of the thyroid gland; the problem is whether the patient should be treated surgically or medically. Laboratory tests are not infallible in these cases either from the standpoint of diagnosis or therapeutic indications. Based on the metabolic rate some patients have been treated medically and others surgically with good, bad and indifferent results in both classes.

The roentgen-ray is undoubtedly of some value in selected cases. In certain cases the disease seems to have been arrested by this method of treatment. I believe "arrested" is the best term to use. Whether the roentgen-ray really produces a cure or not time alone will tell. Some of the patients may require further treatment in eight months or a year, but in my experience improvement has usually followed roentgen-ray therapy. Personally I would prefer the roentgen-ray treatment in suitable cases because it enables the patient to go about and attend to the ordinary duties of life, whereas operation means confinement in the hospital for a considerable period.

Thyroidectomy is not such a simple procedure as surgeons would have us believe, nor is the operation invariably successful in its ultimate outcome. Removal of the thyroid gland is open to the same objections as the roentgen-ray dos-

age: The surgeon does not know just how much of the gland to remove nor how much to leave. If there existed some definite plan by which the amount of thyroid to be removed could be accurately measured, doubtless better results might be secured. If too much of the gland tissue is sacrificed the patient is likely to develop symptoms of myxedema; if too little is removed the symptoms of hyperthyroidism continue.

I agree with one of the previous speakers that the thymus gland is often a factor in hyperthyroid cases. In the majority of instances there is no change that can be shown by x-ray plate in the thymus gland. It is well known that it is quite difficult even in children with large thymuses to determine the outlines of the thymus gland by roentgen-ray examination. There may be something in the theory that the thymus gland is sometimes at fault when symptoms persist after either surgical or x-ray therapy.

Halsteed was the first man in this country to emphasize the importance of the thymus gland in connection with hyperthyroidism, although the theory was advanced before by Kocher of Berne. A young man was operated upon for hyperthyroidism without benefit, and Kocher conceived the idea that the thymus gland might play some part in the pathology. Although the greater part of the thyroid had been removed the young man still had all the clinical evidence of hyperthyroidism. Kocher then went in behind the sternum and pulled out a small piece of tissue which was largely fat. Following this the patient showed marked improvement. With this case in mind Halstead advised including the thymus gland in treating hyperthyroid cases with the roentgen-ray; especially those showing symptoms after operation.

I believe some cases of hyperthyroidism will always be medical or x-ray cases, some will always be surgical. Toxic goitre is always surgical. However, cure may not result from any of these methods. The subject will be an open book for some time to come.

F. W. Rankin: I hardly know just what to say about the treatment of hyperthyroidism in general. As all of you probably know I stand in the surgical group when it comes to the treatment of toxic goiter, but do not discredit the roentgen-ray entirely. I believe hyperthyroid cases should be divided into the following groups: (a) toxic adenoma, and (b) hyperthyroidism.

We have hitherto been led to believe that toxic adenoma is not nearly so serious from the standpoint of treatment as the exophthalmic group. I believe if we will take toxic adenomata with hyperplasia, where the symptoms have persisted for a number of years, and compare the mortality with a similar group of exophthalmic cases, we will find the mortality from an operative standpoint is higher in the adenoma group. Probably this idea originated from the known fact that many of the adenomatous goiters are really not toxic or only slightly toxic. When the fact is remembered that the average duration of symptoms in toxic adenoma is nineteen years against eighteen or nineteen months in exophthalmic goiter, it may be readily seen why extensive myocardial changes have occurred. I think the most serious group of goiters with which the surgeon has to deal are the toxic adenomata with hyperplasia, and I am certain the mortality is about three times as high as in the simple group of exophthalmic goiters.

Richardson has recently reported fifty-seven cases treated in Boston by means of the roentgen-ray, and gives a very fair presentation of the matter. He does not claim too much for the roentgen-ray, nor does he condemn the method, he believes that a certain number of cases are unquestionably benefited and a small percentage cured, but he reported five or six cases of myxedema after roentgen-ray treatment. This is a very high percentage of myxedema following any one method of treatment, whether surgical, radiological, or what not.

The question of roentgen-ray dosage has been raised: I do not believe massive doses are employed by the majority of operators. At the recent meeting of the American Roentgen-Ray Society held in Louisville I had occasion to talk with two or three men who were treating large numbers of goiters with the roentgen-ray, and they were in accord that small doses repeated at short intervals was the best method of treatment.

I do not believe any operative procedure will afford more satisfactory results than thyroidectomy in toxic goiter. Dr. Flexner's observation, which I am sure is based on clinical experience, about persistence of symptoms in toxic goiter after operation, is well taken. There can be no question if the surgeon takes patients with toxic goiter as admitted to hospital and operates upon them immediately the mortality will be high. Statistics of two years ago from one large clinic showed mortality of 1.25%, in another the mortality was 2.04%, as against the general mortality in the hands of the rank and file of surgeons of about 2.50%. There are a certain number of patients with toxic goiter who are beyond any treatment whatever when they apply to the surgeon. They cannot be successfully treated with the roentgen-ray, surgery, or any other method. These individuals are so profoundly toxic that even the injection of hot water into the lobes of the thyroid will in many instances cause death. To attempt ligation of even one of the poles is fatal to a great many of them.

While I agree with Dr. L. W. Frank that at present the best means we have in the treatment of toxic goiter is surgery, yet there is a reasonable field in these cases for roentgen-ray therapy. It seems to me that the type of goiter

which ought to be treated by the roentgen-ray is the group in which the patients are not profoundly toxic.

The radiotherapeutist should be given a fair chance to demonstrate whether or not he can effect a cure in such cases. In the milder types of exophthalmic goiter the prospects of cure from this method of treatment should be much better. With improved technique, as mentioned by Dr. Young, I believe a great deal of good will be accomplished in some of these cases.

As to increased density of adhesions about the thyroid gland following irradiation: There may be something in this proposition, but I question it. If the roentgen-ray has been employed prior to operative intervention the surgeon is inclined to blame the roentgenologist. Some of the worst operative cases I have ever encountered were noted in patients who had never been subjected to irradiation. I doubt if the roentgen-ray has ever done very much harm in these cases.

J. G. Sherrill: We are all familiar with the ancient adage that where many remedies are recommended for the cure of a certain disease we may be certain that none has proven quite satisfactory. I believe this holds true in the treatment of hyperthyroidism.

I cannot understand why the medical man wants to "take a shot at the surgeon." We could accomplish much more if we would all work together instead of the medical man pulling one way and the surgeon another. This applies to many other things in addition to the treatment of goiter.

The time to cure goiter is before it becomes toxic. We do not know the cause of goiter, but it is a fact that large numbers of young women have this affection at the time of development of the catamenia. We also know that women always have goiter during pregnancy. These are important facts to remember. In other words, if thyroid enlargement occurs during a physiological function it shows that something is lacking which is necessary to the well being of the individual. That is the only way we can explain the development of goiter under such circumstances. If we take these young women, as has been shown by Marine, and give them small doses of iodine and insist upon proper exercise and diet, they will get well and probably have no trouble from this cause later in life.

When goiter develops in elderly individuals there is some other factor which is responsible for it. McCarrison has shown that by drinking water from a certain well in India the thyroid was caused to increase one inch in diameter in ten days. His experiment was made on young, healthy individuals. By discontinuing the use of that particular water he found that the size of the neck of these young men soon became normal. Whether the water contained some toxic material which acted as a cause of the goiter is unknown, but we do know that in the Alps where people drink snow water, where there is probably not sufficient iodine or other mineral substance in the water, that these people develop enlargement of the thyroid gland. Of course the thyroid gland may be enlarged without being toxic in type. As a rule toxicity depends directly or indirectly upon the amount of secreting structure. The fact is important that retention of feces in the colon may be a cause of the absorption of material which excites the gland to over activity. There are other ports of entry for toxic material, for instance the teeth, tonsils, etc. All these factors must be considered when the patient exhibits toxic symptoms.

The patient with goiter should live a perfectly normal life. Rich women in society who are continually in a highly nervous state, eating unusual kinds of food, sleeping at irregular times, in a state of constant excitement,—these are the women who develop serious types of toxic goiter. All these things must be taken into account in connection with treatment. And in the management of such cases the internist, the surgeon and the roentgenologist should work together to secure the best results. No doubt by the administration of a few doses of iodine in the early period of development of thyroid enlargement a cure might be affected or at least the enlargement controlled.

When the medical man is confronted with a case of toxic goiter, he should not wait until the patient is in serious condition, and then as Dr. Moore says "turn them over to the surgeon." We do not want such cases after the period of operability has passed. The time to relieve toxic goiter is before serious damage has been done to the cardiac muscle, before this muscle has become flabby, soft or atrophic. We know that toxic goiter usually runs an intermittent course. If treatment be applied at the beginning of a rising wave, whether it be surgical, roentgen-ray, rest, diet, or any other method, and it is found that the patient becomes worse instead of better, it is because treatment was applied at the beginning of a rising wave. If treatment be instituted at the beginning of a descending wave, there is much greater prospect of success. That is something which must be borne in mind. If the patient is treated at the heighth of a wave, absolute rest in bed is essential, with an ice pack over the goiter, perhaps a dose of an opiate now and then, keeping the emunctories active to assist in elimination. This is about the best method of treatment to be applied.

I believe the metabolic test is of some value, but it does not indicate whether the patient will die or recover after operation. Dr. Moore will recall two patients in the city hospital who had goiter of the extremely toxic type, the metabolic rate in the both was above that considered to indicate probable safety of operation, both pat-

ients recovered and remained well after operation.

I am glad Dr. Flexner mentioned the thymus gland in connection with hyperthyroidism. I must confess that I have seen some enlarged thymus glands where benefit resulted from use of the roentgen-ray, and I believe this method should be employed in suitable cases.

In the preliminary preparations for surgery in goiter cases we should all work together, and in that way we will have better success whether we be roentgenologists, internists, or surgeons. If the patient is given strophanthus or some cardiac stimulant, together with rest in bed and the application of ice,—and I am a great believer in the value of ice,—if she is kept away from all sources of excitement, dances, theaters, etc, if the emunctories are kept fairly active, improvement will occur, the toxic symptoms will subside, and operation may then be safely undertaken. If the roentgen-ray is preferred properly graduated dosage should be used.

One difficulty in the past has been that goiter patients drift from one doctor to another and in that way get so many different opinions that they are unable to decide what had best be done. If we would all work together this difficulty could be easily overcome.

THE RATIONALE OF THE X-RAY SIGNS IN DUODENAL ULCER.*

By Charles D. Enfield, Louisville

As recently as ten years ago it was generally taught that the diagnosis of peptic ulcer hinged upon the history, and that if there was in addition to the typical history an increase in the free acid of the stomach contents, the evidence was conclusive. Shortly prior to that time it had been held that duodenal ulcer was extremely rare, Mayo's report of 272 operative cases in 1908 practically doubling the entire number reported in the literature prior to that time. It was primarily due to the teaching of the Mayo's and Moynihan in the years following that the relatively great frequency of duodenal ulcer was recognized, and that the statistical position of gastric and duodenal ulcer was rapidly reversed, the latter lesion being found to be four or five times as common as the former. As stated these surgeons built their diagnoses very largely upon the history, the typical history of duodenal as opposed to gastric lesions being described in considerable detail by Moynihan. At this time the recognition of gastric ulcer by x-ray methods was on a fairly satisfactory basis, and the roentgenologist's demonstration of the ulcer crater directly, or of the Haudek niche, pointing toward the ulcer from the opposite wall of the stomach was quite conclusive both to the gastro-enterologist and to the surgeon. His conclusions with regard to duodenal ulcer were, however, much less convincing—both to himself and to his co-workers—since here he was dependent upon indirect evidence, namely the effect of the duodenal lesion upon gastric motility and tone. In 1914 Cole put the x-ray diagnosis of duodenal ulcer upon a much sounder footing through his demonstration of the direct evidence of the disease; that is to say the deformity of the duodenal bulb, the first part of the duodenum, in which over 90% of ulcers occur. Cole's work was ably seconded by others, including conspicuously Carman of the Mayo Clinic, and in 1922 Charles Mayo quotes Moynihan to the effect that "of all aids to diagnosis he would rather by far have the roentgenologist's report than any other single finding." He almost discredits the laboratory tests, especially gastric analysis.

In view of this statement we thought it of interest to analyze the records of a small series of duodenal ulcer cases chiefly with regard to the three points which had been considered to be of diagnostic value, namely the history, the gastric analysis, and the x-ray findings. There were available for this purpose forty clear cut, recent, uncomplicated cases, still under observation, in which the records were complete. It should be pointed out that there was no surgical confirmation of the diagnosis in any of them; however, as they were all of the type which, as a rule, improve rather readily under medical management, it may perhaps be considered that their uniformly prompt response to diet, and alkaline and anti-spasmodic therapy in some degree constitutes a confirmation of the diagnosis.

Gastric analysis in these cases had been done by the fractional method, the fasting residuum being first obtained through the Rehfuss or Lyons tube, and the usual Ewald meal given with the tube in place. Small speciments were then obtained through the tube every fifteen minutes until the stomach was empty or until 2½ hours had elapsed. The individual specimens were titrated for free and combined acids, and also tested for occult blood. The usual graphic curve of acidities was constructed from the tabulated titrations. It has been considered that there are two types of acid curve consistent with ulcer: the one which is higher than normal all the way through, and the one which, while starting at a low or normal level, rapidly ascends and remains high at the end of digestion. One or the other of these types was found in 37½% of these cases. On the other hand a sub-acid curve was found in 25%, and

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a perfectly normal curve in the remainder. No achylias were encountered in this series although a few showed complete anacidity at the end of the first hour and would have been listed as achylias under the usual one hour Ewald meal technic. The gastric contents did uniformly show clean digestion with a minimum of mucus. Occult blood was found in one or more fractions in only 20%.

The typical ulcer history, including epigastric pain or burning coming on two or three hours after eating, relieved best by food or alkalies, and to some extent by pressure or belching, was obtained in rather less than half these cases. More than half, 55%—failed to give a history at all typical, even though the symptoms were reviewed with the patient after the examination was completed. In 20% there was so little semblance of an ulcer history that the trouble was not even suspected to be primarily in the gastro-intestinal tract, and not even later cross examination sufficed to develop any history of gastro-intestinal disturbance. In two of these cases the presenting symptom was a persistent ache in the right shoulder region; in two others persistent headache was the chief complaint. In these patients the gastro-intestinal tract was examined as a sort of last resort measure after all the seemingly more likely investigations had failed to uncover any tangible evidence of disease. 35% gave histories of vague gastro-intestinal disturbance more suggestive of cholecystitis or chronic appendicitis than of ulcer.

In striking an interesting contrast to the 37½% positive gastric analyses and the 45% positive histories, there were 80% of these cases which gave direct x-ray evidence of ulcer, and the remaining 20% offered indirect x-ray evidence of the condition. By direct evidence we mean a constant deformity of the first part or bulb of the duodenum, which maintains the same irregular and abnormal contour throughout the initial examination, and also through a subsequent examination after the use of atropin or belladonna to physiologic effect. If at any time in either the original or the second examination a "cap" of normal outline is shown, it is considered to exclude any possibility of an x-ray diagnosis of ulcer, in spite of the fact that Carman states that exceptionally an ulcer may exist in a cap of normal x-ray outline. If the massive smooth indentations in the duodenal bulb often produced by enlarged adherent gall bladders be excluded, and if also the type of "cap" deformity occasionally produced by adhesions to the first part of the duodenum be recognized and thrown out, a typical persistent deformity of the first part of the duodenum is considered very conclusive evidence of ulcer. The so-called indirect evidence, consisting as usually accepted, of hyper-peristalsis, hypermotility, and inability to fill a normal cap, together with an enlarged stomach and a 4½ hour residue, is also accepted by most workers as quite conclusive. This combination of course depends on some degree of obstruction, either from spasm or organic causes. Another, and perhaps less convincing type of indirect evidence includes hyper-peristalsis, hypermotility, and hypertonus together with the absence of the normal cap outline, but without the large stomach or the residue at the end of the 4½ hour period.

In this series of cases, then, the x-ray evidence was conclusive in 80% and highly suggestive in 20%, as compared with less than 50% for either the history or the gastric analysis. Of course no one would presume to draw conclusions from so modest a group of cases; however, I believe these averages are much in line with general opinion among both clinicians and roentgenologists today. It may be of interest to examine into the reasons for the reliability of the roentgen findings and the uncertainty of the other evidence.

As seen at the operating table or in the post-mortem room duodenal ulcers vary in size and character from mere pin head erosions of the mucosa to deep excavated craters with a corn-like callus over the top and marked scarring and distortion involving all the coats of the bowel. It is obvious that the latter type, the old cicatrized ulcer, will produce a marked deformity of the bulb as seen filled with barium on the fluorescent screen or the plate. However, the tiny erosion may produce quite as marked a deformity, when the patient is conscious—not anaesthetized or dead—through the influence of intrinsic spasm. The bulb deformity as seen on the screen is due to two factors acting together in variable degree, the actual filling defect and distortion produced by tissue changes; and the spasm induced by the action of the zone of inflammation about the ulcer upon the nerve endings in the bowel wall. The duodenum is under both long (or central) and local, reflex control, and it takes more than physiologic doses of atropin to abolish entirely nerve action on the gut. A small ulcer may have a large area of inflammation around it, thus giving a large field of hyper-excitable afferent nerves, and hence great extension of reflex contraction. The location of the ulcer with reference to large nerve paths may also be a factor. On the other hand when the patient is opened under general, or even local anaesthesia, most of these abnormal contractures will not be in evidence since the anaesthetic has abolished the reflex paths. Ordinary doses of atropin or belladonna will, however, as a rule relax spasm arising from causes outside the gastro-intes-

tinal tract; hence the second examination under atropin in cases where the first examination has given indirect or doubtful positive indications is of value in differentiating intrinsic from extrinsic spasm. As healing takes place the spasmodic element of the bulb deformity abates; the deformity arising from scar formation or contraction for the most part remains, and this may be negligible or considerable. The alterations in tonus, peristalsis, and motility are also reflex in character and are, like the bulb deformity, unaffected by atropin. Where organic obstruction does not exist they tend to disappear as healing occurs.

Recent work seems to offer an adequate explanation of the unreliability of gastric analysis in the diagnosis of ulcer. It has apparently been proven that the gastric contents are not intimately mixed and homogeneous except at the very end of gastric digestion. Samples taken at intervals of a few seconds, from the same stomach and through the same tube, have shown variations as wide as 30 points in the free acidity. Furthermore, there is probably no direct connection between gastric acidity and ulcer. It is well known that duodenal ulcer and complete achylia may occur together, and it is probable that when increased acidity does occur, it depends rather upon obstruction, either from pylorospasm or organic causes, than upon the presence of the ulcer itself. As pylorospasm is by no means a constant factor in ulcer, neither may hyperacidity be expected to be. Blood, either in the stomach contents or stool, is obviously an accidental finding, of positive value when present, but of no negative value if absent.

The characteristic feature of the typical ulcer history is pain—coming on two or three hours after food, and relieved by food or alkalies. It is now recognized that this pain is due rather to hyper-peristalsis than to hyper-acidity, and that at the moment of the greatest pain the acidity may be nil. Hyperacidity, when present, may reflexly induce contraction and thus indirectly cause pain, but it is neither the direct nor the only causative factor. On the other hand when hyperperistalsis is not caused by excess of acid it is undoubtedly due to reflex effects from the ulcer itself, and therefore should be expected to vary with the location of the ulcer as regards the nerve paths and with the extent of the surrounding inflammatory zone. These two variable and more or less accidental factors probably explain the frequency with which more or less a typical histories are encountered.

The x-ray evidence, however, is based upon two pathological changes which must in a greater or less degree accompany all active ulcers, that is to say, the break in continuity of the mucus membrane itself and the inflammatory zone, with its irritated nerve endings, about it. The same conditions which contribute to its accuracy in the original diagnosis make it of value in estimating the progress of healing, where medical treatment is the method of choice.

NOTE—The cases from which the above percentages were tabulated were previously reported in a paper read before the Detroit Meeting of the Radiological Society of North America, December 4th, 1922, called the "Relative Value of the X-Ray Evidence in Duodenal Ulcer."

DISCUSSION

D. Y. Keith: Those of you who are not doing x-ray work may not understand what we mean when we speak of the direct signs of duodenal ulcer. When deformity of the duodenal cap is constantly present we are certain from an x-ray standpoint that a duodenal ulcer exists. It is not the size but the constancy of the deformity that makes the diagnosis, and we speak of this as direct evidence. There are other things that will cause duodenal deformity but it is not constant. There may be incisura from spasm just as seen in gastric ulcer; a small ulcer may cause a great deal of spasm.

I was surprised to hear Dr. Enfield's estimate of the percentage of indirect evidence. I believe he stated that only twenty per cent of his patients gave indirect evidence. Carman says more than sixty per cent of duodenal ulcers will give indirect evidence. I am sure, from watching Carman work over a period of several days, that his percentage is higher than that. He will often make a diagnosis of duodenal ulcer on the indirect evidence alone. The two things in particular that he mentions as indirect evidence are: six hour retention and hyperperistalsis and hypermotility.

To describe briefly what we mean by hyperperistalsis and hypermotility: In the normal stomach we may see two or three peristaltic waves in a given time; when we see four, five, six, or more we are sure there is gastric spasm, an hyperperistalsis and probably ulcer. By hypermotility we mean the quick emptying of the stomach and the progress made in the six hour period; instead of being in the cecum or the ascending colon, the barium will be seen in the transverse colon or beyond. Both the direct and indirect evidence should be carefully studied in arriving at the diagnosis.

The x-ray evidence is worth more than all other examinations combined, and when deformity of the duodenal cap is constantly present we are certain of the diagnosis of duodenal ulcer.

M. Casper: We are all grateful for anything which will increase our diagnostic ability, and papers such as the one read by Dr. Enfield are of great value. The question of diagnosis, after all, is the most important item not only in duodenal ulcer but in everything else. If the

diagnosis is correctly made the patient usually gets well under appropriate treatment provided he has a curable affection. Dr. Enfield's paper is splendid and we should have more like it.

One diagnostic point in duodenal ulcer I would like to stress is that there is first a rapid emptying of the stomach which continues to a certain point, progress then ceases and examination at the end of six hours shows some retention. I regard these as valuable diagnostic signs of duodenal ulcer.

Another important point was called to our attention some time ago by Wydler, i. e., the raising and lowering of the duodenum on change of position. In the normal individual it has been found that the duodenum, when changing from the recumbent to the erect posture, travels about 7 cm. or a distance of more than the width of two vertebrae. In the presence of ulcer the traveling is lessened by at least one-half, or perhaps the distance of one vertebra.

Cancer and duodenal ulcer are sometimes very difficult to differentiate; but, of course, this makes little difference if the patient is an operable risk and is to be treated surgically. However, if the patient is to be treated medically as Dr. Enfield has been doing, we must be positive in our differential diagnosis of the two lesions. The question of treatment is a very large one, but as this phase of the subject was not included in the paper, it would not be proper to discuss it.

Differentiation between duodenal ulcer, appendicitis, and gall bladder disease, is also difficult sometimes. Adhesions from gall bladder disease may cause deformity of the duodenal cap which does not return to normal under the administration of belladonna. Surgeons often see the gall bladder adherent directly to the duodemum, and in such cases there is always a deformed cap as shown by x-ray examination although no ulcer is present. Duodenal deformity in appendicitis disappears under the administration of belladonna in most instances.

Another item of importance is palpation: This is of more value, however, when the ulcer is proximally located or near the pylorus. Pain and tenderness over the ulcer region can be elicited by palpation while using the screen. This is of great value as the pain can thus be definitely located.

I think before the surgeon operates in any case of suspected duodenal ulcer he should carefully study the patient with the roentgenologist if he does not do x-ray work himself. By seeing the lesion under the screen he has a better idea of what he has to contend with. The surgeon and roentgenologist should work together in the study of gastric and duodenal ulcers. I concur in the statement that the roentgen-ray is the most valuable aid we have in the study of these cases. The clinical history was formerly thought of the greatest diagnostic value, and it is still valuable in that it calls our attention to the fact there is something wrong. Analysis of the gastric contents is of little assistance in the diagnosis of duodenal ulcer; likewise the so-called hunger pain is not now regarded as being of paramount importance.

C. W. Dowden: I am sure Dr. Enfield did not wish to create the impression that the only valuable evidence in the diagnosis of duodenal ulcer was to be obtained from the roentgen-ray findings. I do not believe he means to leave the impression that he disregards entirely the result of gastric analysis, nor do I imagine that he believes a positive history is without value. On the other hand, I doubt if we are entitled to say, because we find a filling defect in the duodenum, that the patient has an active duodenal ulcer.

A duodenal ulcer which has healed leaves some evidence behind after the cure is completed. I think it happens not infrequently that the patient presents vague symptoms of one sort or another, and at the same time may show a duodenal cap deformity, without these two facts having any relationship whatever to each other. So far as I am aware there is no accurate method of determining from the roentgen-ray evidence alone whether or not the ulcer is active. Is it not quite possible to have a persistent and typical deformity of the bulb without the so-called hunger pain and associated symptoms, and with an occasional trace of blood in the fecal matter, and yet with no activity of the duodenal lesion? Is there any x-ray evidence which will differentiate such a condition from an active, progressive ulcer?

In the forty odd cases reviewed in Dr. Enfield's report, all of which have been observed rather recently, there was in practically every case other evidence to substantiate that obtained through the roentgen-ray. The confirmatory findings were not in all cases the same. In one instance the history was typical; in another the acid curve on gastric analysis; in still another there was more or less constant blood in the stomach contents and in the stools.

While I feel that there can be no question that the x-ray evidence is the most valuable and most constant to be obtained in these patients, I think it ought wherever possible to be reinforced by gastric analysis and repeated blood tests on the fecal matter after suitable dietary preparation and careful inquiry into the history, if necessary even by means of leading questions.

The roentgen-ray will show cap deformity probably in ninety-five per cent of either active or healed ulcers, but does cap deformity alone suffice to show whether the ulcer is old or recent? Whether, indeed, it may have any relationship whatever to the symptoms which caused the patient to present himself?

C. D. Enfield (closing): Carcinoma of the duodenum is such an extremely rare lesion that the question of differentiation between it and ulcer seldom arises.

The typical duodenal deformity seen in gall bladder disease is a pressure deformity of smooth outline presenting a regular curve and is entirely different in character from the ulcer deformity. No difficulty will be experienced in differentiating the two. The bulb deformity caused by adhesions is more likely to be confused with that of ulcer, yet the points of differentiation are numerous and quite well defined. It is not of course accompanied by the changes in gastric tonus, peristalsis and motility, which occur in ulcer.

Belladonna never abolishes the spasm arising from duodenal ulcer. Herein lies its value as a diagnostic aid since any spasm which appears on the first examination and disappears under physiological doses of belladonna must necessarily be an extrinsic spasm due to some other cause than ulcer.

From the x-ray standpoint I believe it is perfectly possible to differentiate between active and healed duodenal ulcer. In the healed lesion it is true that there may remain a residual deformity due to scar tissue or thickening of the mucosa. This, however, will be of relatively slight extent as compared with the spasmodic deformity of active ulcer and it will not be accompanied by the increased gastric tone and increased peristalsis and the hypermotility, some—or all of which—almost invariably accompany active ulcer. As pointed out, the portion of the bulb deformity due to the lesion itself is usually a very small factor when compared with the total deformity, by far the larger part of which arises from spasm. As we observe the process of healing by repeated x-ray examination we find the spasmodic feature lessened as improvement takes place, so that the end picture after successful treatment is very different indeed from the picture in the active stage.

Of course no one wishes to depend upon a single diagnostic measure where many are valuable, and the clinician will always prefer to base his conclusions on as much evidence as can be obtained. At the same time I feel that a well founded x-ray diagnosis of active duodenal ulcer, even in the absence of other findings, is able to take care of itself.

Traumatic Psychosis or Neurosis Not a Clinical Entity.—It is Hadley's belief that there is no clinical entity which may properly be called a traumatic psychosis or neurosis. However, there has been found, following severe injury to the brain, an alteration in the personality, which may be described as the "posttraumatic constitution."

GONORRHEAL URETHRITIS AND ITS COMPLICATIONS IN THE MALE.*

By Thomas M. Dorsey, Louisville

Definition of the term urology has been gradually expanded until it is now made to include all medical and surgical diseases of the urinary tract in both males and females (kidneys, ureters, urinary bladder, urethra), also the prostate gland and other genital organs of the male.

The purpose of this paper shall be to outline gonorrheal urethritis and its complications, with particular reference to the male, without attempting to discuss intricate details as would be expected were it written especially for urologists. The paper will have served its purpose if it leads to earlier and more accurate diagnosis of gonorrheal urethritis and recognition of its complications. Unsavory as may be the subject of gonorrhea the disease is frequently forced upon the attention of the urologist because of existing doctrinal differences in the medical profession as to the efficacy of certain methods of diagnosis and treatment.

In gonorrheal infection, as in other diseases, incorrect and delayed diagnosis is usually attributable to non-employment of methods which promise accurate results. Many cases are rendered dangerous, the patients becoming incapacitated and lapsing into chronic invalidism before methods are employed which have made urological diagnosis more accurate than that obtaining in other fields of medicine. In the Urological Clinic of the University of Louisville, and my private clinic where many such patients are seen daily, I have endeavored to evolve a system by which a definite diagnosis may be insured and adequate treatment instituted to prevent complications.

By anterior urethritis is meant inflammation of the anterior urethra, i. e., distal to the anterior layer of the triangular ligament. In posterior urethritis the inflammation has extended proximal to the anterior layer of the triangular ligament and involves the membranous and prostatic urethra. The use of the phrase "total urethritis" serves satisfactorily, as it means inflammation of the urethra from the meatus urinarius to the vesical orifice.

The period of incubation of gonorrheal urethritis is from three to ten days. It usually begins with itching and burning about the meatus. The patient's attention is called to the discomfort, whereupon he examines the meatus and finds a thin, watery exudation. This in turn becomes mucous, mucopurulent,

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*Read before the Jefferson County Medical Society.

and then frankly purulent, there being a copious discharge of yellowish pus. This pus is sometimes changed further to a brownish color due to the admixture of blood. The symptoms now, from the subjective standpoint, are intense pain and burning on urination; the objective signs are poutiness and swelling of the meatus, possibly phimosis or paraphimosis.

As the disease progresses and extends backward by continuity to contiguity of structure, the severity of the subjective symptoms is intensified and various complications almost necessarily arise. The early finding of pus and intra-cellular micro-organisms in the discharge is followed by disintegration of the cytoplasm of the leucocytes with escape of the organisms which then become extra-cellular. The diagnosis is based upon the foregoing signs, examination of the discharge for micro-organisms, and the three glass urine test. The urine in the first glass is clouded with pus and that in the two subsequent ones is clear. This means that the uncontaminated urine cleanses the urethra and its inflammatory contents are contained in the first glass.

In total urethritis there is inflammation not only of the urethra distal to the triangular ligament but also proximal to it extending to the urinary bladder. The subjective symptoms then become greatly increased, there being urgency, dysuria, pollakiuria, incontinence and urinary dribbling. It seems to the patient that the act of urination has been incomplete, and he therefore makes repeated efforts at short intervals to empty the viscus, each being associated with great discomfort. There are also constitutional signs which are often observed, such as chills, fever, sweats, loss of appetite, a general feeling of disability and lack of tone. The discharge from the meatus is less than in typical anterior urethritis, but the formation of pus continues. The excretion is for the most part accumulated in the prostatic urethra, and, following the line of least resistance, enters the vesical cavity, where it becomes intimately intermixed with the urine. This is explained by the fact that the external sphincter is more sensitive, stronger and quicker in action than the vesical sphincter, and the latter is overcome by the backward pressure of the excretion. When this has happened and the patient voids urine into three glasses it is noted that all are clouded with pus which upon examination may be found to contain germs of the disease. Sometimes there is blood in the third glass of urine; this comes from the posterior urethra.

The question not infrequently arises: "Why if the germ-laden pus passes into the bladder, does not cystitis develop in every case?" As a matter of fact it does, but it is a cystitis colli, or inflammation of the vesical neck. Only four to five per cent of cases of cystitis are due to gonococci, because the peculiar character of the vesical epithelium renders it resistant to gonococcal invasion. It is known as the "transitional type" of epithelium. There are definite reasons for persistence of the disease and disqualification of many patients, and it seems a shame that physicians generally are not better acquainted with the reasons for its chronicity.

To show what a "simple" disease so-called gonorrheal urethritis is it may be well to enumerate some of the structures which may be involved and the complications which not infrequently supervene and affect not only the urinary and genital tracts but also various other anatomic situations entirely foreign to both.

Among the most common are: inflammation of the glans penis and prepuce, followed by phimosis or paraphimosis, and involvement of the para-urethral ducts just within the meatus. In the urethral floor are numbers of small glands (glands of Littre) whose ducts traverse the mucous membrane to the urethral interior. Involvement of these glands is common giving rise to follieulitis and later peri-urethral abscess. On the dorsal surface of the urethra are the crypts or lacunæ of Morgagni; these are nothing more nor less than urethral folds and seem designed to harbor disease germs which invade the canal. This, however, is also true of the other structures mentioned.

In the floor of the bulbous urethra are ducts leading from Cowper's glands situated between the layers of the triangular ligament; these ducts are about one and a quarter inches in length. Proximal to this point is the prostate gland which is truly a genito-urinary organ; it serves a useful purpose in urination and also in generation. It impinges upon the vesical neck above and its apex is in close proximity to the posterior layer of the triangular ligament. Its dimensions are approximately: one and a half inches wide, one and a quarter inches long, and three-quarters of an inch antero-posteriorly.

In the floor of the prostatic urethra is the verumontanum which contains the sinus pocularis (blind-pouch) and orifices of the ejaculatory ducts which open just within or without this sinus. The floor of the prostatic urethra contains eighteen to twenty ducts leading from the gland substance. Nine or ten of these ducts are in the sulci on either side of the verumontanum.

It can be easily seen how infection may extend from the prostatic urethra downward and backward to the seminal vesicles and

along the vas differentia to the epididymes. The globus minor is first attacked and then the globus major. Where the testicle also becomes involved the condition is known as epididymo-orchitis. These cases are frequently diagnosed by the general practitioner or surgeon as "orchitis" when actually the testicle is not involved.

A more or less consecutive enumeration of the complications of gonorrheal urethritis, from the meatus backward, would be about as follows:

(1) Phimosis,
(2) Paraphimosis,
(3) Balanoposthitis,
(4) Dorsal lymphangitis,
(5) Inguinal adenitis,
(6) Para-urethritis,
(7) Peri-urethritis,
(8) Peri-urethral abscess,
(9) Stricture,
(10) Cowperitis,
(11) Prostatitis,
(12) Verumontanitis,
(13) Utriculitis,
(14) Seminal vesiculitis,
(15) Vasitis,
(16) Epididymitis,
(17) Orchitis,
(18) Hydrocele,
(19) Prostatic abscess,
(20) Proctitis,
(21) Cystitis colli,
(22) Trigonitis,
(23) General cystitis,
(24) Ureteritis,
(25) Pyelitis,
(26) Pyelonephrosis,
(27) Peritonitis (common in women),
(28) Arthritis,
(29) Exostoses,
(30) Conjunctivitis.

It becomes apparent that gonorrheal urethritis, often regarded as no more serious than a "bad cold," exercises considerable authority when once established; and the most stubborn argument against not giving special attention and care to genito-urinary diseases becomes the best argument for it.

The treatment of what is commonly known as "gonorrhea" involves early recognition of complications as they arise as well as the urethritis in its entirety. The treatment is really (a) preventive, (b) prophylactic, (c) abortive, and (d) curative.

Preventive treatment means abolition of the disease by curing it on the one hand, or isolating persons who would spread the disease either male or female, on the other.

The prophylactic treatment has for its function the prevention of development of the disease after exposure. This is accomplished by carefully cleansing the urethra by urination after coitus, bathing the glans, prepuce and meatus with soap and water, followed by injection of one per cent warm protargol solution which is held in the urethra for five minutes. This should really be repeated every four hours for the entire subsequent day. It is, of course, advisable to use the injection as soon as possible after exposure; by all means within two hours where this can be arranged.

The abortive treatment embraces efforts to arrest the disease in its incipiency. This may be best accomplished after the diagnosis has been made by protargol in two per cent solution injected by the physician himself three times daily. The fluid is held in the urethra for five minutes. After the second day the strength of the solution is reduced by one-half. It has been noted in many instances that the disease was aborted by this somewhat heroic measure. It must not be forgotten however, that pronounced urethritis may result from the injections alone; but if the disease is attacked before it becomes specifically peri-urethral, much good may be accomplished.

The curative treatment of well developed anterior urethritis depends greatly upon its severity. Rest is most important. The patient should be kept in bed if possible, be given a bland diet, large quantities of water at short intervals, urotropin twenty grains per day, and injections of protargol one per cent four times daily. Should there be evidence of lack of resistance associated with swelling of the meatus, peri-urethritis and intense pain, rest in bed without local intra-urethral treatment is indicated; but the patient may be given oil of cubebs or santal oil in proper quantities. If the meatus is too small to permit of proper drainage, meatotomy should be performed. No harm can come from this simple operation.

When the actively acute symptoms have subsided injections of one per cent protargol may be resumed. The urine should be examined daily to determine whether the disease is improving or advancing. The urethral discharge should be examined at frequent intervals to govern change in strength of the solution used for injection. The next reduction in strength is to one-half of one per cent, then to one-fourth of one per cent, according to indications. When the micro-organisms have disappeared the patient is given some styptic solution for injection. Zinc sulphate 1|500 seems to be eminently satisfactory. No injection should be given until the patient has urinated. After no germs have been seen for some time, or appearance of the "morning drop," total urethral and vesical

irrigation, instrumentation and urethral dilatation are indicated. The urethra should be palpated with the sound in position and any small follicles discovered are massaged on the instrument. Infected glands are often responsible for persistent chronicity and should be detected and treated as soon as possible; when they become encapsulated their contents cannot be removed in the manner described.

In acute anterior and posterior urethritis the picture changes sufficiently to suggest further study of the cases especially as relates to treatment. In the first place adequate rest must be immediately enjoined and local treatment discontinued. There are dangers aside from the discomfort of continuing intra-urethral medication, the most serious being that of causing epididymitis such as sometimes occurs after massaging an acutely inflamed prostate. The operator must wait and bide his time; when the extremely acute symptoms have subsided then local treatment may be used, either the injection of protargol, irrigation of urethra and bladder with potassium permanganate 1|3000, nitrate of silver 1|15,000, or warm boric acid solution.

In acute anterior urethritis instrumental treatment is commenced when the active symptoms have subsided and few if any micro-organisms are found. There is no special reason why prostatic massage should not accompany the treatment in general. The prostate should not be massaged every day for the reason that harm instead of good may be done. The prostate should be carefully examined by palpation, noting its size, consistency, contour, adhesions, etc. It is further important to examine the prostatic excretion after each massage to determine the progress of the disease and its further treatment. The relative number of pus cells and lecithin bodies should be given careful attention at each examination. It is perfectly true that, as resolution in the gland takes place, there is diminution of the pus cells and a relative increase of the normal elements, especially lecithin bodies. These are small, highly refractile globules, structureless in appearance, resembling small paraffin oil droplets. They take stain with pronounced avidity.

Chronic anterior and posterior urethritis call for prostatic massage, total irrigation and dilatation of the urethra with sounds or the Kohlman dilator, but the vesical cavity should always be filled before instrumentation. Mild styptic injections seem to greatly assist toward cure. A reasonable amount of exercise, liberal diet and change of environment help matters wonderfully.

One must not disregard the fact that occasionally a recurrence of gonorrheal urethritis may become most active; but importance should also be attached to the number of exposures not enumerated by the patient. He will create the impression under the pressure of questioning "that he could not have gotten it from this or that source." Such confidence is indeed wonderful.

As already shown the complications of gonorrheal urethritis are numerous and the physician should be sufficiently acquainted with them to make the proper diagnosis and minimize foolish mistakes. It is unfortunately true that many physicians attempt to qualify as urologists on the basis "that they have treated numbers of patients for gonorrhea." Such statements are more or less pitiful, as every one who has been long in practice has perforce had to do some work in this line. The real importance lies in proper diagnosis, followed by intelligent treatment of the disease and the complications as they arise. An attempt will now be made to call attention, more or less perfunctorily, to some of the complications, diagnosis, and treatment.

(1) Phimosis calls for posthetomy or dorsal incision, with treatment of the underlying cause. In addition to the peri-urethritis, which has resulted from the gonorrheal infection, phimosis is facilitated by the presence of balanoposthitis.

(2) Paraphimosis results from the peri-urethritis, and longitudinal incision of the constricting base is indicated. In the event this is not done nature intervenes and tissue necrosis soon occurs to relieve the existing edema.

(3) Balanoposthitis calls for cleanliness and posthectomy is necessary.

(4) Dorsal lymphangitis is best treated by being left alone.

(5) Inguinal adenitis is treated radically by excision of the affected gland and closure of the wound. It is often satisfactorily treated with hot applications or tincture of iodine.

(6) Para-urethritis is responsible for chronicity, and it sometimes becomes necessary to incise the ducts with knife or cauterize them with an electrically heated wire.

(7) The early manifestation of general peri-urethritis is demonstrated by the presence of what is known as "chordee." Local treatment, other than cold applications when the organ has reached the "summit of the curve," seems to accomplish nothing. The patient is best treated by sedatives to prevent erethism and to promote sleep. Keeping cool and away from sexual excitement is advised.

(8) Peri-urethral abscess is recognizable by the presence of a bulging, inflammatory and tender nodule pointing toward the under surface of the urethral canal. Such abscesses are subjectively painful without interference and also tender on pressure. They occur in the pendulous or perineal portion of the tract.

It is unwise to make an incision in the pendulous portion because of the danger of a permanent urethral fistula. This part of the tract is fickle and unstable, therefore the almost involuntary changes render it unwise to resort to such procedure. The abscess usually ruptures into the urethra; if it does not it may be opened within the urethra under guidance of the eye through an endoscope, or if drained from without the incision should be made parallel to the median line of the corpus cavernosum. However, if there is unmistakable evidence of "pointing" of the abscess, a small nick with scalpel is all that will be required to satisfactorily drain the pus. By that time plastic resolution of the urethral floor with scar tissue has occurred and there is little danger of much damage being done. Peri-urethral abscesses in the perineal region may be opened with impunity, and this should be done early and proper drainage secured. With either type of abscess there is more or less urinary obstruction and stricture formation almost invariably occurs which must receive attention later. These abscesses are the result of infection of the glands of Littre and are known as "folliculitis." When not of sufficient size to require radical measures they are massaged on the sound after the disease becomes chronic. In other instances they may be satisfactorily incised through the endoscope.

(9) Stricture must be recognized as to location, character, dimensions, and whether single or multiple. This may be successfully accomplished by bougies. The treatment is either by dilatation with sound or dilator, filiform and follower, or by internal or external urethrotomy followed by dilatation.

(10) Cowperitis first manifests itself by pain and swelling lateral to the anus, difficulty on urination and pain during defecation. The diagnosis is based upon the subjective and objective signs and by palpating the affected glands with the forefinger in the rectum. The treatment is incision and drainage on either side of the anus as the case may be.

(11) Prostatitis occurs in about eighty per cent of cases of gonorrheal urethritis and is divided into acute, subacute and chronic. For the sake of possible embarrassment to the patient and to avoid the dangers which are obvious, never massage an acutely inflamed prostate.

(12) Verumontanitis is responsible for the terminal hematuria noted in acute posterior urethritis and immediate treatment is not indicated. It is treated later by application of nitrate of silver crayon through the endoscope, or by instillation of the solution into the prostatic urethra with the Ultzman syringe.

(13) The sinus pocularis which is situated beneath the verumontanum is a narrow blind sac and therefore becomes the host of infectious material. It is responsible for persisting chronicity, and may be aspirated or injected with the utricle syringe and needle as advised by Geraghty. This is done under direct vision through the endoscope.

(14) Seminal vesiculitis occurs by invasion from the prostatic urethra and symptoms of pain and discomfort soon develop identical in many instances to the pain of prostatitis. The diagnosis is made by palpation through the rectum. The treatment consists of hot rectal irrigations, massage (except in the acute stage), in some instances drainage through the vasa efferentia, injection of protargol, or argyrol, or perineal section and drainage. The latter is considered a dangerous procedure for the reason already stated, i. e., there are few operators who would not do more damage by invading this "sacred territory" than the possible compensatory benefit that might be thereby derived. Fortunately nature defeats the most of those who attempt such radical measures, and I am prone to advise the simpler methods and nature, as against radical measures sometimes employed more for the display of questionable skill than anything else.

(15) Vasitis is the forerunner of epididymitis and accepts its treatment and resolution along with the epididymis.

(16) Epididymitis begins in the globus minor from descending infection. Soon there is a sense of pain and swelling, the part becomes very tender and painful especially on pressure. The diagnosis is made by the gradual onset and general symptoms. If the testicle is drawn forward and allowed to rest between the middle and ring fingers, the tip of the thumb soon locates a transverse sulcus between the testicle above and the globus minor below. While held in this position the forefinger and thumb are used to palpate the body of the epididymis and to determine the degree of involvement as well as the condition of the testicle. The treatment requires rest in bed, suspension of the scrotum to relieve tension on the inflamed vas and cord, hot or cold applications as may be demanded, poultices, acupuncture or epididymotomy. The latter method relieves intramural tension and pain and can be applied under local anesthesia with satisfaction.

(17) Orchitis of any especial severity is rare and when occurring is usually the result of marked epididymitis. The treatment is the same as for epididymitis except incision, unless there is evidence of abscess.

(18) Hydrocele requires palliative measures, viz., aspiration and drainage. No rad-

ical measures should be instituted when it occurs as a complication of gonorrheal urethritis.

(19) Prostatic abscess should be given some chance of resolution before resorting to the knife or trocar. The abscess displays a disposition to rupture into the urethra, rectum, or urinary bladder. If active constitutional symptoms arise, accompanied by urinary obstruction, the abscess should be opened and drained through the perineum or aspirated through the rectum. Hot rectal irrigations and suppositories containing one grain each of extracts of belladonna and opium, morphine or codeine should be employed as demanded.

(20) Proctitis results from urethritis through rupture of a prostatic abscess into the rectum. It is the rule to refer such patients to the proctologist for treatment.

(21) Cystitis colli, or inflammation of the vesical neck, is almost invariably associated with acute posterior urethritis. The treatment required is rest in bed, light diet, diminished water intake, and oil of santal or cubebs may be given; if there is much urgency and dysuria the patient should be given equal parts of tincture of hyoscyamus and potassium acetate in water.

(22) Trigonitis is likewise a common result of acute posterior urethritis. The fact that the trigone contains mucous glands is probably responsible for its almost invariable involvement. Trigonitis is usually intimately associated with cystitis colli, but seems to persist longer and is responsible for inflammatory and hypertrophic changes in the glands of Albarran situated beneath it and near the vesical orifice. I have seen hypertrophy of the posterior boundary of the trigone, but have been unable to determine its cause. There has been no definite treatment suggested other than irrigation, or when obstruction has become pronounced, resection of the obstructing area. Rarely is it necessary to resort to surgical intervention and treatment as a rule is by irrigation. The diagnosis is made by cystoscopic examination.

(23) General cystitis resulting from gonococcal infection is rare but nevertheless occurs. The treatment is rest, bland diet, forty to sixty grains of urotropin daily, large quantities of water, codeia sulphate or morphine for relief of pain. Irrigation with nitrate of silver 1|10,000, bichloride of mercury 1|40,000, warm saturated boric acid solution, or permanganate of potassium 1|30,000. It sometimes becomes necessary to immerse the patient in a warm bath to promote comfort. The only means of definite diagnosis is the cystoscope. The symptoms differ but little from those of acute posterior urethritis save in the intensive constitutional manifestations. With the cystoscope one is able to carefully inspect the entire vesical interior.

(24) Ureteritis, or inflammation of the ureter, will probably cause constitutional symptoms plus pain referred to the bladder, penis or perineum.

(25 and 26) When pyelitis or pyelonephrosis results from gonococcal invasion the chances for recovery are so remote as to suggest arrangements for the obsequies, to have the obiturarian write of "his beautiful, model life," and then state as the cause of death "blood poisoning." The latter at least is true as there is probably by this time general septicemia with involvement of all the important organs and peritonitis.

(27) Peritonitis is rarely seen in the male unless from either general septicemia or ruptured bladder infected by gonococci. The treatment is celiotomy and drainage. Peritonitis is not uncommon in women, but follows endometritis, metritis, and oophoritis. It is responsible for salpingitis and subsequent adhesions. The treatment rests more with the gynecologist than with the urologist.

(28) Gonorrheal arthritis has been responsible for many physical disqualifications, not only because of the disease itself but apparently from the failure of proper diagnosis. Arthritis usually appears about twenty days after infection and may involve similar joints single or multiple on either side. If recognized in the acute or even in the subacute stage the patient may be treated most satisfactorily with anti-gonococcus serum, vaccine, or mixed treatment known as "phylacogen." It must be remembered that while these agents properly used are most excellent for the specific condition here mentioned, they are not "worth a tinker's anathema" for the cure of gonorrheal lesions of other types. This may sound empirical and that is the way it is meant. Evidence of the correctness of this observation has been repeatedly substantiated. It is unwise to begin with the largest dosage of "phylacogen," but with ½ cc. on the first day, 1 cc. on the second, and on subsequent days inject subcutaneously 2 cc. It is inadvisable to further increase the dosage as it will be found these cases respond most satisfactorily. I have made autogenous vaccine which has served for the case in point, but as already stated after diligent effort have been unable to find that vaccine does any good in other than acute arthritic lesions. The imperative importance of recognizing these cases early and applying the treatment as recommended cannot be over-emphasized.

(29) Exostoses not infrequently are encountered by the orthopedist. They occur as small osseous spurs growing outward from

the os calcis or astragulus. They induce pain and discomfort on walking, follow in the wake of gonorrheal urethritis, and are diagnosed by the symptoms and roentgen-ray examination. The micro-organisms of Neisser have been found in these spurs, and their treatment is strictly surgical.

(30) Conjunctivitis should be looked for from day to day and the patient warned as to the care of both hands and eyes. In the event there is the slightest conjunctival irritation and discharge microscopic examination of the excretion should be immediately made. If the gonococcus is found instillation under cocaine or alypin anesthesia of protargol, argyrol or nitrate of silver in proper strength should be made and the other eye immediately protected by a shield. The next step and the one of greatest importance is to call an ophthalmologist and have him take charge of the details of treatment. No general practitioner or specialist, other than one especially qualified to handle such cases in the most intelligent manner, should be entrusted with the treatment. This is one place where the much overriden "professional ethics" should be relegated to oblivion and sane judgment employed.

I believe that, even to the untrained mind, the foregoing remarks concerning gonorrheal urethritis and its complications are quite enough to insure safety in recommending the importance of careful and specific diagnosis and treatment.

INFLUENZA*

By L. E. Botts, Glasgow

Influenza is a specific, contagious, and infectious disease, caused by the Influenza Bacillus, or rather a mixed infection occurring in pandemic, epidemic and endemic forms, characterized by general aching, marked prostration, fever, anorexia, and inflammation of the affected mucous membranes. The first epidemic occurred in the summer of 1665. During the nineteenth century there were four pandemics, 1830-32, 1836, 1847-48, 1889-90. There was a worldwide outbreak in 1918 which seemed to originate in Eastern Europe. It attacked millions of persons and caused more deaths than the world war. Practically every outbreak has been followed by others of less severity for a period of three or four years. Influenza usually occurs during the winter months. However, it may break out at any time. While all data on the disease points to the disease being contracted by contact with persons affected through the secretions expelled by the patient, by coughing and sneezing, but personally, at least fifty per cent of my cases gave a history of non-exposure. This might be explained by Influenza Carriers, such as we sometimes have in typhoid fever and diphtheria. Sometimes fifty percent of the people are affected and no age is exempt. However, the very young and the old persons show less susceptibility and the robust are as apt to succumb to it as the weak. It does not confer immunity and a relapse is usually more severe than the original attack. An epidemic usually lasts from four to eight weeks in its severe form.

Etiology. The Bacillus Influenza, described by Pfeiffer in 1892, has been generally accepted as the cause of Influenza. However, in 1918 a number of competent bacteriologists reported numerous cases where this bacillus could not be found in the secretions. Some say that it is caused by a virus and I think we can class it as Mallory does the cause of a tumor; that is, at least at the present time there is no assignable cause for its existence. But we do know that whatever it may be it breaks down the resistance and opens up a channel for the invasion of other pathogenic bacteria and seems to stimulate the growth of pneumococci, streptococci, staphylococci and occasionally meningococci.

Influenza alone rarely proves fatal, death practically always being due to a secondary infection, and in the majority of cases death is due to pneumonia, the latter is practically always of the lobular type. These patches are as a rule found in both lungs, and occasionally a massive lobar infiltration is found, probably due to the confluence of many small bronchopneumonic areas. In fulminating cases there are no consolidated areas, but an intense ingorgement accompanied by blood stained sputum.

The incubation period is short, usually one to three days and the onset is extremely abrupt. One of the first symptoms is chilliness, the fever rises from 101 to 104, intense headache, backache, muscular soreness, commonly described as "aching all over," eyes congested, face flushed, sneezing, coughing, sore throat, muscular weakness, profound prostration, depressed spirits, loss of appetite, nausea and in some cases vomiting. The cough at first is dry and harsh, simulating that of measles, but later is accompanied by a mucopurulent discharge. Pains through the chest are common; the breathing is rapid. Nose bleeding has been an important symptom during this epidemic and in some cases very hard to control. Following the chilly sensations temperature rises and in an hour or so the patient will be in a profuse sweat often wetting the bedding.

Physical examination reveals a characteristic picture, the patient really looks sick, a

*Read before the Barren County Medical Society.

drawn, pinched, anxious expression, very similar to that of typhoid, the conjunctiva is congested, the lips parched; tongue is dry with heavy brownish yellow coating in the center and red around the edges; herpes are common; the throat is congested and where the patient has large tonsils they are usually affected. The breath is fetid and the teeth covered with sordis and a thick brownish mucilagenous material. The chest examination reveals the signs of a bronchitis. There a weakness of the respiratory murmur, with a greater or less number of loud musical or coarse mucous rales. The heart sounds are distinct, some increase in rapidity, slight accentuation of the second pulmonic sound. One very interesting thing I have noticed is that while listening to the same area there will be numerous changes; for instance, with stethoscope fixed, at first you will hear a fine sibilant rale, then have patient breath deep and the rale will change to a coarse mucous type, then have patient cough and the rale will disappear and the breathing seem normal.

The nervous form. This is usually associated with all cases of influenza to a lesser or greater extent, commonly as headache, backache and pains in muscles and joints, such as are commonly called neuralgia pains. Numerous cases are troubled with insomnia and restlessness. All forms of neuritis may be seen and during the present epidemic tic douloureux is common. Very fortunately the severer forms melancholia, meningitis, encephalitis, and paralysis, have not accompanied this epidemic.

Gastro-Intestinal Form. With the onset there is usually a chill followed by nausea and in some instances vomiting which is very hard to control. There is severe abdominal pain. The abdomen becomes distended and very tender. The spleen becomes enlarged. There is either a diarrhea or obstinate constipation. Some show signs of jaundice, although not so pronounced as during the epidemic of 1918. The fever runs a very irregular course, usually from 101 to 104, the pulse slow in comparison. The tongue is dry, heavily coated, breath very fetid, the stools are thin and have a greenish tinge with considerable mucus oftentimes streaked with blood. The patient becomes drowsy and stupid, often dropping off to sleep during the examination. There is gurgling in the right illiac fossa and taking everything but the onset into consideration the patient gives a perfect picture of typhoid fever. In fact, I have a case now that has run a typical typhoid course, has even had the rose spots and I would call it typhoid if it were not that he has three sisters that were taken at the same time similar to him and have practically recovered; all were taken suddenly; three other members of the same family had the respiratory infection.

Complications. The heart seems to play the most important role in complications. It may be affected during any form of Influenza. It becomes very irritable at times the rate is high, then it will slow down, in some cases to forty beats per minute then have the patient turn from side to side or sit up in bed and it will increase thirty or forty beats. At times it becomes irregular and intermittent, the pulse will show a full volume for two or three beats then it can hardly be felt. It is very interesting to note this with the pressure instrument, one or two beats will throw the hand four or five spaces, then several will be noted that hardly move it. Generally the pressure is low. Numerous cases have a mitral murmur which are purely functional; at least, all that I have encountered have cleared up; therefore, it leads me to believe that the disturbances that we have are due to the toxic effect upon the nervous mechanism, rather than a localized infection.

Otitis Media has been a troublesome complication among children, often both ears being affected.

Pneumonia is the most frequent and fatal complication. It usually develops early in the disease or as a result of exposure before a complete recovery. It is issued in abrupt usually starting with a chill, severe pain in side, high fever rapid pulse and painful fast breathing and the sputum becomes streaked with blood. One of the earliest physical signs is moist crackling rales heard best near the end of inspiration and usually found in the lower axillary region; as a rule it affects both lungs.

Pleurisy. This is one of the most painful complications of influenza. The patient will probably seem to be recovering uneventfully, then a sudden pain, lancenating in character, strikes him which seems to cut short every inspiration. The fever rises, but not so high as in pneumonia. Auscultation over the affected area reveals the characteristic friction sound, which in from twenty four to thirty six hours disappears and usually an effusion follows. If an exploratory puncture is made this fluid will usually be sanguinous and thick which in the majority of cases terminates in pus. However, I have one case that has been aspirated three times and now seems to be clearing up without pus formation.

Empyema. Following the extremely painful pneumonias and pleurisies be on the lookout for empyema. Or if the seemingly uncomplicated case takes on a febrile course, that is running an afternoon temperature,

chill and sweats, examine closely for areas of pus. If the physical findings do not clear up the clinical aspect, have an x-ray examination made. This will often show an interlobar empyema.

Nephritis. Practically every case of influenza during the recent epidemic has shown some form of urinary changes. The urine becomes scanty, amber colored, offensive odor, acid in reaction, high specific gravity, cloudy and if centrifuged there is an enormous amount of sediment. Numerous cases have albumin, practically all microscopic examinations reveal pus cells and casts. I think this form should be classed as an acute toxic nephritis.

During the epidemic of 1918 we saw a number of purpura hemorrhagica cases the hemorrhages varying from pin point to that of a silver dollar in size.

Severe conjunctivitis is occasionally seen, and may lead to an iritis.

The nasal accessory sinuses are often involved, most commonly the antrum of highmore or frontal.

During the 1918 epidemic I saw a brain abscess at autopsy that was attributed to Influenza.

Septicaemia and thrombosis are occasionally encountered.

Treatment. Isolate if possible, and burn or thoroughly disinfect all nasal and bronchial secretions, keep in comfortable, well ventilated room, but beware of drafts. Every case should be looked upon as serious and the patient be kept in bed until all fever disappears. If the convalescence is guarded the complications are greatly decreased. The patient should remove all clothing and put on an outing gown. Careful feeding and nursing are very important. In the beginning a large dose of calomel followed by oil or saline cathartics next morning. Then say Aspirin Compound every three or four hours. That seems to control the fever. Along with that I give some sedative or Codein; some give heroin; I get best results with Codein. When there is a severe cough I find Syrup of Ipecac of service and I have learned one lesson from our old friend Dr. Grinstead, that is the use of Tartar Emetic. It will not only help the calomel along, but seems to help the cough. In cases of pneumonia I get best results with creosote carbonate, thanks to my father here, and always use mustard plasters. Make them as hot as you can get them without blistering. With Pleurisy, strapping the side with adhesive relieves the pain better than anything else. The Gastro-Intestinal cases are the hardest to control. We have found three grain doses of Cloretone given in capsules will give them relief. I think every case of Influenza where they are in a weakened run down condition should be kept in bed until a few days after the fever has subsided; and they should always have a tonic.

DISCUSSION

Leslie Richey: I have had some seventy five or hundred cases, all types. I have tried about every remedy I could think of; have had very few deaths. I find that calomel in large doses helps, although I did not use it on the start. They all cough and I have never been able to find anything to completely stop that.

C. C. Howard: These men have all seen a great many cases of influenza, both in 1918 and this year. I have come to the definite conclusion that there is nothing that will do very much good. Just meet the symptoms, let him rest, give him enough opiates to make him comfortable. If he cannot take anything into his stomach, let him alone. We used to think we could cure them with vaccines and we used to think we could cure them with Tartar Emetic. It cannot be done. I usually give them a little aspirin and phenacetin and a little opiate, enough to make them comfortable. Put them to bed and leave them alone. You can give them vaccines. Sometimes they help. Ninety percent of these cases will get well if you just put them to bed and give them plenty of water. Another important thing is to get help for them; someone to wait on them. A whole family will get sick, all in one room, vomiting, coughing in each other's faces, which is enough to give them mixed infections, pneumonia and many other diseases. They must have some one to take care of them. I have given them camphorated oil in pneumonia in thirty six grain doses daily. I give that and Digitalis, which should be given them early. I am thoroughly convinced that there is no specific. Give them air and don't overtreat them. I think if the medical profession would "fess up" on a lot of things it would do us a lot of good. We are doing the best we can at that, but we must work out something for this as we have for Diphtheria.

I have had flu two or three times; had it once aboard ship coming home and really thought I was going to die coming home. I stayed in bed and ate a few oranges; it was about all I could do.

Clifton Richards: Didn't you pray a little?

C. C. Howard: Yes, and I prayed a little, as most men when they think they are about to die; and think about a lot of things they have done. That reminds me of that story of Irvin S. Cobb's: "the Nearest I Ever Came to Death." It was just a big Morphin lie. No man ever felt like that when he was dying. I have never taken anything much for influenza. When I was sick the last time Turner gave me some medi-

cine; some of it I took and some I didn't. When I was sick aboard ship I had only a few oranges; had a pretty good doctor a good fellow; he used to come to see me once in a while and bring me some weiners, throw them at me, which would always make me sick. I have just come to the conclusion that there is nothing much we can do. We must put someone with them to care for them. Watch closely for complications following your pneumonias. If they do not clear up within two or three days after a crisis don't fool yourself that you have an unresolved pneumonia. Take a large calibre needle and insert in the plenual cavity. Ninety five chances out of a hundred you will be rewarded by getting pus, which will enable you to relieve the patient before his lung is permanently damaged from pressure. Do this by making an incision in the intercostal space and putting in a large stiff rubber tube. You can do this under locals, or if necessary use a little general. Don't fail to have a large noncollapsible tube, as these cases have plugs of fibrin that cannot drain through little catheters. Hold your tube in place with safety pins and adhesive, filling the pleural cavity with Dakins solution seems to hasten the recovery, but free drainage is the secret.

C. G. Depp: If I had to do without all but two things I would choose plenty of water and salines. I believe in water, externally, internally and eternally. If you have a good tub near give the patient a good hot bath and repeat it as often as you care to. It will do him good. This seems to affect the nervous system to take all the kick out of patients. As to vaccines, I believe there are cases where vaccines prove most useful. I have one man whom nothing ever did any good; he would have trouble with his head all winter, would sneeze and his nose would run continually. I finally gave him Vancott's mixed vaccine and cured him right away. Now I give him a few doses at the beginning of winter and he has no more trouble until the next winter. Vaccines have relieved me a great deal too. I believe with good nursing in a well ventilated room and pleasant surroundings and holding the fever down for the first forty eight hours will do moreto prevent complications than anything else.

A. T. Botts: I am anything but a therapeutic nihilist. I give them medicine to meet all the symptoms. They should have an early stimulation of the glands with adrenalin and pituitrin. You just raise their resistance with glandular therapeutics. I think this helps a great deal. When they take influenza the glands in the body are run down and need treatment. Everyone ought to give it. I give this to all my influenza patients.

C. C. Turner: This was an excellent paper. Few men would have taken the time and trouble to get up a paper like it; it was well thought out and very thorough. Whether or not we agree or differ on the matter of calomel does not matter. It is well to have a meetng of medical men and to compare notes. We have all seen different cases, have seen through different eyes, have treated them differently and if you will look at the many certificates one's results are about as good as another's. There is no specific and if you know of any treatment that will help, go to it. Dr. Froedge is one of the old men in this county and we certainly appreciate his paper. He has sized up the siutation in a concise style, from thirty years' personal experience which was very interesting.

MEDICAL TREATMENT OF GASTRO-ENTERITIS IN INFANCY AND CHILDHOOD.*

By W. R. Burr, Auburn

In presenting a paper to this enlightened body on the medical treatment of gastro-intestinal disturbances in infancy and childhood, I realize that, in a sense, I am in the attitude of "Carrying coals to Newcastle."

I take it that you gentlemen are experienced in the medical, as well as in the dietetic, management of such affections, and I am quite sure that you are as capable as I am myself to cope with them, if not more competent. But it is never amiss for one to burnish his mind and readjust his "Thinking Cap" on subjects that are of "Pith and Moment" to him, and to many thinking, the internist does not meet with cases that should give him more concern than the acute and subacute gastro-intestinal disturbances in infants and children.

One never acquires the last word concerning anything and there is always something worth while to be added to one's stock of knowledge by reasoning together with his fellows on the problems that are presenting themselves every little while.

The old axiom that "An ounce of prevention is worth a pound of cure" should be changed and phrased to say that an ounce of prevention is worth a ton of cure. And as "The thoughts of men are widened with the process of the suns," and the enlightenment of the masses concerning the care of infants and children, increases, their "Second Summer," as well as first summer, troubles become less frequent. But as was said of the poor, we will always have them with us.

It is my province, however, today, to discuss the medical phase of treating gastro-enteritis in infants and children, the more important subject of dietetic management having been announced for another paper, in which I am sure it will be properly presented.

*Read before the Third District Medical Society at Bowling Green.

In dealing with the medical aspect of these cases the attendant needs to draw liberally on his fund of common sense and to steer clear of polytherapy. He needs, too, to beware of the Sarah Gamps and of over-anxious parents and friends. Usually not much medicine is needed, and it is easy to be lead into overdosing. In choleric cases, whatever is to be done must be done quickly. Unfortunately, when there is a low temperature, and there are profuse watery discharges, there is little hope of combatting the symptoms and the little patient is apt to slip away from you.

I believe with Kerley that stomach washing and bowel irrigation, in the circumstances avail nothing. The indications are, plainly, to stimulate and hold up the strength of the child and to help him, if possible, to overcome the toxemia.

High temperature, with the skin hot and dry, calls for tepid bathing; and low temperature, with cold extremities and cyanotic symptoms, for the hot baths and hot applications in the way of hot-water bottles.

Hypodermic stimulation and sedatives are demanded, strophantine, caffeine-sodio-benzoate or camphor in oil being used as good and quick stimulants. Before the advent of the Volstead era some of the best authorities on pediatrics advocated the hypodermatic use of brandy in twenty to thirty drop doses and it appeals to reason that it would still be good tepapeutics to do so, provided it were available.

For the troublesome vomiting and loss of fluids, and for sedative effect, morphine and atropia, in doses according to age, of course, are the best remedies to be used; but they should not be used except in such an emergency.

In less urgent cases, the treatment should be entirely different. There should be a strict discontinuance of food for at least twenty-four hours, and water that has been boiled can be given, if vomiting is not persistent. If there is troublesome vomiting, albumin water can be tried and small doses of cocaine in lime-water and cinnamon water, equal parts, may help to quiet the irritable stomach.

In the less acute cases the stomach may, with advantage, be washed once daily with warm soda water and the colon irrigated with a normal salt solution about three times in twenty-four hours, until symptoms improve. One-tenth grain each every ten minutes until ten doses are given.

It is well to give a preliminary dose of calomel and soda, one-tenth grain every twenty minutes until ten doses are given; or of the old-fashioned chalk with mercury, following it in a few hours with a dose of castor oil. These little patients usually take the oil surprisingly well and it is, in my opinion, an excellent eliminant and soother. In some cases it may seem advisable to give a few doses of alkaline elixir, the formula of which you are doubtless familiar with. Elimination of the offending bowel contents and rendering the bacteria of fermentation inert are the things to be accomplished.

Research has enlightened us with the fact that the bacteria that cause fermentation are destroyed by those of putrefaction, and that the administrations of proteins will furnish an army to drive the offenders out; and common sense teaches that eliminants and protein administrations are to be resorted to.

If the well-known symptoms of acidosis appear, and they frequently do, we should get busy and give cold bicarbonate of soda by the mouth and a warmed solution of the same by the drop method per rectum. Another remedy for the condition is sugar, which may be given subcutaneously or intra-venously, but not by the mouth, since if it is administered in the latter way, it may add fuel to the fire by increasing fermentation.

After the cleansing measures, benefit may be obtained by the administration of the sulpho-carbolates of lime, zinc and soda in essence of caroid and cinnamon water. Subnitrate of bismuth in large doses may be beneficial in these cases and this can be combined with the sulpho-carbolates, already mentioned, if deemed advisable.

The mistaken notion obtains among most of the laity—and once in a while a doctor is found who holds to the opinion—that opium should be used in these cases to the point of checking the bowels. Four or five passages in twenty-four hours, especially if the temperature stays elevated, would not afford too much elimination.

Opium may be necessary and do much good if the actions are accompanied with much griping and restlessness, in which event a fourth to half a grain of Dover's powder, or five to ten drops of paregoric may be added to each dose of the bismuth and sulpho-carbolates until the tenesmus is controlled.

The sulpho-carbolates should be continued, diminishing the dosage as the child's condition improves, and until he is ready to come back to a milk diet.

In these cases an ilcocolitis frequently ensues, as is evideneed by a persistent fever and frequent loose green stools, and in addition to the remedies already mentioned, measures should be instituted to destroy the bacteria that cause the colitis, which are different "Birds" from those that bring about gastro-enteric infection. Their destruction is probably best accomplished by the administration of bacillus bulgaricus tablets which introduce into the colon lactic acid bacteria.

DIETETIC MANAGEMENT OF GASTRO-ENTERITIS IN INFANCY AND CHILDHOOD.*

By W. S. Sandbach, Pembroke

With the recent advances in bacteriology and physiologic chemistry and corresponding improvements in sanitation and infant feeding, cow's milk no longer holds the record of the "destroying angel" of the poor innocent babies. Indeed, a case of gastroenteritis is seldom met with which is not primarily traceable to some gross error of diet entirely independent of cow's milk feeding. The sooner the physician will appreciate that fresh, unpolluted, properly modified (as to quality and quantity) well kept, and regularly administered cow's milk is not inimical to good health and perfect development of the child the better will he be prepared to reveal the etiologic factors of the gastro-intestinal disturbance and combat them.

Acute Gastro-enteritis: The active treatment should begin, as already suggested with the earliest inception of the gastro-intestinal disorder. Regulation of diet is our most efficient therapeutic measure, and is almost invariably attended by improvement in the child's condition, if it is begun with a few hours' starvation of the patient after a thorough cleansing of the alimentary tract of its obnoxious contents by nature's diarrhea or medicinal agencies.

Feeding, breast or bottle, should at once be suspended until such time as exigencies for resumption of feeding shall demand. In the meantime, especially in the absence of strong contradications, such as violent vomiting, the infant should receive large quantities of hot or cold water or a light infusion of black tea. This is nature's own remedy, as shown by the frequent refusal of nourishment by infants and children at this time. There is no question but that many an infant would be spared of a severe attack if no food whatever were urged or even permitted until appetite returned. Water must be offered freely, since what may appear to be appetite for food is often only thirst. Infants at the breast are best given only water, thin barley water or strained broth for 24 hours or even longer if severe symptoms persist. After this nursing may be cautiously resumed, curtailing the duration of each nursing and perhaps alternating with barley water. In the case of bottle fed infants the same method of treatment should be followed except that the return to a milk-food must be delayed longer; broth, albumin water or barley water or other cereal decoctions taking its place. Not until after several days when symptoms have nearly or quite disappeared, can a return to a milk be made. Both fat and sugar are liable to disagree, although in many instances they are remarkably useful in spite of its sugar content. For infants past the nursing period, and for older children, the avoidance of milk is advisable also, giving broths and gruels instead for a number of days.

Subacute and Chronic Gastro-enterocolitis. The regulation of diet is most essential. No hard and fast rule, however, can be laid down in this direction. We must feel our way in every individual case. It is always a good plan to begin treatment with discontinuance of milk for a day or two. In the meantime the patient should be fed on thin barley water, cocoa, a light infusion of black tea, albumin water, diluted protein milk, and perhaps, a small quantity of freshly boiled, fat-free chicken or mutton soup. As soon as the stools diminish in frequency and improve in consistency we resume milk feeding in very high dilution. For a child, let us say of six months, one table spoonful of fat-free milk to seven tablespoonfuls of barley or rice water, to be given every three hours, and directions given daily to increase the quantity of milk until the ratio of 1 to 2 is reached; then gradually the total quantity at this ratio is augmented, until six ounces are obtained for each feeding. Should the milk mixture disagree, a weaker milk mixture is resorted to or milk is again discontinued. Some infants do well, at least for a time, on condensed milk and barley water; other, especially those suffering from the so-called "fat-diarrhea," improve rapidly on albumin milk, skimmed milk or whey, and still other (older ones) who cannot tolerate milk in any form get along on toast and tea, mashed potatoes with beef juice or chicken soup, soft-boiled egg, ground rice custards and other semisolids. Last in line, but foremost in importance, is the fact that in young infants a complete cure of chronic gastro-enteritis in bottle fed infants is effected by a prompt change from bottle to breast feeding.

Summary: All food, but especially cow's milk, should be stopped at once. No food whatever should be given upon a very irritable stomach; but thirst should always be relieved by bland fluids and water given at frequent intervals. Articles requiring the least digestion and leaving the smallest residue should next be tried. Food prescriptions must be made with the same care and exactness as those for drugs, for most cases they are more important. Quantity and frequency must be stated as well as the articles ordered. Directions should be given in writing, or they will be forgotten before the physician is out of the house. A practical acquaintance with the

*Read before the Third District Medical Society at Bowling Green.

proper appearance and taste of every food ordered, is absolutely indispensable.

It is a common mistake to give too much at a time, to feed too frequently, to try too many articles at once, and to change before a thing has been fairly tested. For a single feeding the quantity allowed will vary according to the tolerance of the stomach, but it should generally be much less than is given in health, usually from one fourth to one half of that amount. It is very rarely, if ever, necessary to nurse or feed a sick child oftener than every two hours, and four-hour intervals are in many cases to be preferred. In all cases water should be allowed frequently and freely.

It is a difficult problem to feed these children under three years of age, capricious as they are by nature and still more by education, and the judgment and tact of the physician are taxed to their utmost. We must have many resources, for a food which one child takes well the next utterly disdains. The best plan is to select from a list of articles of accepted value, such as circumstances will permit, and such as are most likely to be properly prepared, and try them patiently, one after another, until one is found which the child under treatment will take and which agrees best with him.

MEDICAL FADS AND FALLACIES.* ANCIENT VERSUS MODERN.

By Stanley Mullins, Wingo

Introductory: Instead of preparing an elaborate address for this occasion, outlining the presumed advances which have been made toward the acme of perfection in application of the healing art during the last few years, I have thought it might be interesting to briefly review and compare a few ancient fads and fallacies with certain equally fallacious doctrines and methods which are now in vogue. We are all aware of the multiplicity and prosperity of the various "pathies," "isms," and "cults" which give every promise of ultimately supplanting legitimate medicine in many sections of the country. These mysterious medical cults are spreading rapidly among the public and unless properly checked will, to the detriment of mankind, lead us away from the path of medical science and back to the superstitions of the long ago when witches held sway and spooks ruled through fear of the unknown.

Explanatory: Literally the word fad may be correctly defined as a hobby, a freak or whim; in medical parlance this is construed to mean a plan of procedure unjustified by fact and unconfirmed by the observation and experience of others. Medical fads may be harmless or otherwise according to circumstances and conditions.

We might define a fallacy as something which is definitely deceptive or false in appearance and which misleads the eye or mind; an unsound argument or mode of arguing, which, appearing to be decisive of the question involved, is in reality not so; an argument or proposition apparently sound but really fallacious; a statement in which error is not apparent, and which is therefore likely to deceive or mislead.

We understand a myth to be a fanciful story of great antiquity which originally embodied a belief regarding some fact or phenomenon of experience, and in which often the forces of nature and of the soul are personified; an ancient legend of a god, a hero, the origin of a race, etc.; a wonder story of prehistoric origin; a popular fable which is, or has been, received as historical; a person or thing existing only in imagination or whose existence is not verifiable.

The interesting term of quack or charlatan means a boastful pretender to medical skill, an empiric, an ignorant practitioner; one who boastfully pretends to skill or knowledge not possessed. This term may be applied to every practitioner who, by pompous pretenses, mean insinuations, and indirect promises, endeavors to obtain that confidence to which neither education, merit nor experience entitles him.

The situation has been summarized by a recent writer as follows: Fads in medicine are delusions in regard to the unpossessed curative power of drugs or the curative virtue of necromancy, jugglery, conjury, sorcery, sleight of hand, osteopathy, chiropractic, suggestion, "Christian Science," divine healing, magnetic healing, "hoodooing." Conjury and sorcery were practiced in Egypt in the time of the Pharaohs, whereas Christian Science, suggestion and magnetic healing are later delusions. Medical fads, like the ocean tides, rise and fall, phoenix-like:

"When one delusion sinks and dies,
A hundred from its ashes rise."

It is a matter of historical record that medical practice in antiquity was almost indissolubly associated with mystery and superstition; but medicine was then in its infancy, nothing was known of anatomy, pathology, or the etiology of disease, and prevailing ignorance was therefore entirely excusable. And even at a later period did not the immortal Galen insist upon correctness of his fanciful theory that the human body consisted of four "humors," viz., (a) blood, (b) phlegm, (c) black bile, and (d) yellow bile, and that disease owed its origin to excess or diminution

*Presidential Address delivered before the South Western Kentucky Medical Association, Paducah.

of one or more of these humors? Others believed every human affliction could be traced to supernatural agencies, the machinations of evil spirits, an offended and irate deity or demon. There were still others whose clouded intellects assumed that all human ailments, mental and physical, were directly attributable to the influence of astral or planetary bodies, or to miasmata incident to atmospheric, climatic or seasonal variations. Even the venerable Father of Medicine, Hippocrates, accorded especial prominence to the moon as a factor in the cause of disease, particularly the production of critical changes during the course of certain maladies. Galen wrote a treatise on medical astrology, and it is said that everyone desiring to become a practicing physician had to pass an examination on this subject. However, despite their ignorance in many other respects, some of the ancient practitioners were quite as well versed in the art of prescribing for the ill and afflicted as are many of their more modern conferers.

In proof of the time-honored adage that "there is nothing new under the sun" it is only necessary to search the musty pages of the volumes of bygone days wherein will be found recorded nearly all the newer methods of medical therapeusis at present in vogue. This is intended to especially refer to prevailing practices of the various "pathies" and "cults." Instead of being new some of the methods employed were discarded as worthless hundreds of years ago and are now merely revived and foisted upon the unsuspecting public as of recent invention; and the public accepts them as such under the "guarantee to cure."

The various "pathies" and "cults" mentioned in this review are considered without the pale of therapeutic legitimacy, therefore the doctrines and methods promulgated must be classified as fallacious, although some of them have been approved and legalized by many states in the union including Kentucky.

Animal extracts, or the endocrinologic fad: Were it possible to formulate definite judgment based upon literature of the last two decades, the conclusion would be inevitable that any system of medical practice which did not include administration of animal or glandular extracts should be relegated to the realms of oblivion. This so-called new method of therapy has been recommended and employed for the alleviation or cure of almost every ailment to which human flesh is heir, and "marvelous results" have been reported. An eminent eastern physician, elaborating ideas already advanced, is largely responsible for the present status of the endocrinologic fad. It has reached the stage of popularity where a special journal is devoted to the subject, and several others have established departments in which animal extract therapy is regularly reviewed. There are apparently otherwise intelligent but misguided physicians who have adopted this method of treatment as a specialty, thus becoming known as "endocrinologists," evidently under the erroneous impression that the scheme is essentially new.

Some of the best informed writers seem of the opinion that animal extract therapy originated with Brown-Sequard in 1891, but those familiar with ancient medical history should know that animal extracts (especially those of the testes) were used by Greek and Roman physicians nearly four thousand years ago. The following is a favorite prescription from the Egyptian materia medica written thousands of years before the Christian era:

RX—Wildcat fat, Hippopotamus fat, Crocodile fat, Serpent fat, Numidian ibis fat, aa grs. XV. M.

This combination was considered invaluable in a great variety of human ailments for both external and internal use. It is said to have been a popular remedy with physicians along the River Nile "before the foundations of the Egyptian pyramids were laid."

The first Chinese medical writer of importance was Chang-Ka, who lived three thousand years before the "Star in the East appeared to the shepherds on the plains of Bethlehem." Chinese physicians also believed in animal extracts, and, being governed by suggestive therapeutics, administered pulverized bones of elephants, lions and tigers believing thus to bring renewed vigor and activity in the feeble and prolong life in the aged. Horns of animals noted for combativeness, and bones of fishes that were rapid swimmers, were also pulverized and administered in a manner similar to that in which compounds of animal extracts are now used. Silk-worm larvae were given to beautify feminine features; the human placenta boiled several hours in an old earthen urinal was administered internally for the cure of phthisis; fried and pulverized "privy maggots" were given for worms, and powdered scrapings from old commodes administered during childbirth prevented the mother "taking cold." The latter was known as the "priceless powder" of the Chinese.

Hippocrates describes one hundred and fifty animal extracts. Pliny wrote on philosophy and medicine nineteen hundred years ago; he was born ten years before the advent of Christ. His "Historia Naturalis" of thirty-two books is one of the greatest monuments of ancient literature. The last or thirty-second volume treats of animal extracts, and "here we find the origin of Brown-

Sequard's elixir of life." Pliny states that "the Greeks and Romans ate the testicles of the donkey as a remedy for nervous disorders and loss of sexual power, and the ovaries taken from a small animal, similar to our guinea pig, on account of its great fecundity, were used for barrenness in females."

Diascorides in the first century described the medicinal properties and uses of one hundred and sixty-eight animal extracts; and Placitus in the fourth century described the alleged medicinal properties of every organ or gland in both human beings and animals.

To illustrate the extent to which medical fads may be practiced, not many years ago a physician recommended the injection of freshly prepared urine of a child into the urinary bladder for the cure of chronic cystitis in aged persons; and another injected hypodermatically some of his own semen into his invalid wife's body stating that her strength rapidly improved and after four injections she was entirely well.

It is believed sufficient evidence has been cited to show that there is nothing new in the administration of animal or glandular extracts for the alleviation of human ailments. The practice has merely been revived and has become one of the most prevalent fads in medical circles. The opinions of others to the contrary notwithstanding the statement appears reasonable that, for the most part, the entire scheme of endocrinology as at present applied is fallacious, and the conclusions of its votaries are based upon intangible evidence.

In this connection the reminder seems pertinent that the much vaunted method known as serum-therapy (or sero therapy as now called), which bears a close kinship to the administration of glandular extracts, was also understood and used nearly two thousand years ago by Greek and Roman physicians. It is said that in the third century B. C. King Mithradates practiced artificial immunization and serotherapy. He feared being poisoned by some of his subjects and rendered himself immune by taking a small amount of poison each day. The method of using serotherapy as protection against the bite of venomous serpents was by injecting blood of animals fed on vipers. Diascorides treated rabies by having his patient "drink the blood and eat the cooked liver of the dog that had bitten him."

Osteopathy or the Manipulation Fad: Literally interpreted the work osteopathy (k. e., bone plus suffering) can only signify disease which involves the osseous system. The votaries of this particular fad, however, have expanded definition of the term to mean, in abstract: "a collection of symptoms more or less constant not present in the normal; a progressive science in response to demand for a new therapeutic method eminently superior in point of rationality, freedom from injury to the patient and successful results to any other method in use; a veritable, purely mechanical, common-sense plan of treating structural and functional disease without knife or drugs by scientific manipulation which makes no demand upon vitality of the patient but enlists the curative powers contained within the body." The osteopath, being a student of force, deals with the body as a wonderfully constructed machine composed of various organs and tissues, each performing some specific function in promotion of vital economy, under the supervision of vital forces, and when perfectly adjusted will continue to operate its full appointed time unless interfered with by accident or abuse. Truly this would be a wonderful and marvelous scheme if it were only true, but those of us who are practicing rational medicine are aware that it merely represents a medical fad or fallacy.

It is interesting to note, in passing, that the osteopathic fad did not originate in 1874 in the obscure village of Kirksville, Missouri. More than eighteen hundred years ago Galenus wrote a treatise on the "Use of the Different Parts of the Human Body" composed of sixty-six volumes nine of which were devoted exclusively to "Anatomical Manipulations" now known as osteopathy—including massage—which are claimed as new discoveries in the medical world. The more we investigate and study medical fads and fallacies and trace them backward through the musty volumes and manuscripts of ancient times the more ready are we to agree that "there is nothing new under the sun."

The comment seems pertinent that the osteopathy fallacy is infinitely inferior to "Christian Science," Mesmerism, faith cure, etc., since it does not even claim the single virtue which all of the latter possess, i. e., appeal to the imagination in alleviation of human suffering. The votaries of this fad claim the various bodily organs are subservient to the brain which constitutes a veritable human drug store and from which they propose drawing all medicines necessary to cure disease by manipulation of bone, muscle and nerve. Again a wonderful theory if it were only true. The disciples of this pseudoscience regard the use of drugs as criminal; they are taught little anatomy, physiology or chemistry; yet the demand is made of legislatures that this excrescence shall receive recognition as a distinct art of healing without complying with the law regulating medical practice. And, unfortunately for humankind, they have been granted this privilege in many states of the union.

As is well known the parent school of this pseudo-science is located in Kirksville, Missouri, it is strictly a money-making scheme owned and controlled by the Still family; it is the parent of half a dozen lesser schools in various parts of the United States which "graduate" hundreds of students to practice their so-called "manipulation" method on frail, weak humanity.

Chiropractice or the Adjustment Fad: Of more recent invention and probably an outgrowth of osteopathy is the fad known as chiropractic. That it is strictly a pseudo-science doubtless all will agree. Even the word chiropractic is impossible of definition unless it be derived from cheiropraxy which means manipulation in the treatment of disease. The scheme is based upon dogmatic principles similar to those which characterize osteopathy, the main difference being in phraseology by which osteopaths distinguish themselves from their allied and newer competitors. The former base their theory of cure on "manipulation" while the latter use the term "adjustment," both meaning change in position of body structures in their various relationships.

The original chiropractic school, located at Davenport, Iowa, is the reputed mother of half a dozen others in various sections of the United States, which, like the osteopathic institutions, are sending their "graduates" to all parts of the world "sowing the seeds of ignorance, superstition and fanaticism, and reaping as easy prey the credulous weaklings, the maimed and halt, the deaf and dumb,—in fact, all comers regardless of age, race or conditions."

In so far as can be determined the practice of chiropractic is based entirely upon mythical assumption having no basis in reality and surrounded by theories which to the unbeliever appear not only untrue but absolutely false and impossible. The scheme is so contrary to observation and experience, and so entrenched in the market of money-making, that it savors of the occult. Based upon existing information it appears obvious that chiropractic is being improperly and illegally practiced in many communities, and to judge from certain unpleasant and unfortunate happenings, "manipulation for appendicitis with rupture and death; adjustment for diptheria and not reporting these infectious foci, and other conditions," this scheme, operated by its many untrained and inexperienced votaries, is a distinct menace to society. If permitted to continue chiropractic and similar cults will ultimately utterly negative medical science; will destroy all medical books; will close medical schools and laboratories; experimentation will cease; beside instruction will no longer be needed; we will soon return to the superstitions and mysteries of the dark ages so far as medicine is concerned; we will merely be "adjusted" or if preferred we may deny the existence of disease; mankind will have no need for physicians; when war comes there will be no surgeons and when epidemics appear who will succor the afflicted but the undertaker, if indeed there be such left?

Christian Science or the Faith and Prayer Fad: As may be surmised from the euphemistic designation, the Christian science fallacy is based upon the doctrine of immaterialism, according to which there is no material or solid substance extent; disease therefore exists only in the mind. This dogma, founded on ancient Asiatic philosophy, is contrary to the teachings of Christianity, it is repugnant and insulting to the intelligence of every thoughtful human being; moreover, it is distinctly unchristian and unscientific in its significance. To the votaries of this cult all disease is non-existent and the efficacy or physical remedies is unequivocally denied.

Historical investigation reveals that faith cures have been known since the beginning of time. The revival of this belief under the erroneous title of christian science originated with the hysterical vaporings of a senile and imbecilic woman whose name has been familiar to everyone during the last few decades. It is indeed amazing what gigantic frauds may be promulgated and perpetuated in a civilized country under the guise of Christianity. In this instance, however, the Christian spirit seems entirely lacking, and the scientific aspect is submerged in a maze of superstition, mystery and ambiguity which can neither be understood nor interpreted. "It is impossible to condemn in too strong terms the absurdities of the pseudo-psychological principles upon which the practice of Christian science is ostensibly based. It would be impossible to crowd more errors and fallacies into the pages of any book than are found throughout Mrs. Eddy's Science and Health."

In common with other so-called mind healers, faith healers, etc., of the over-credulous, try to induce the belief that there is no such thing as pain or disease. It is said that the founder of this beguiling sect exhibited about as many eccentricities and inconsistencies in her life as the theory and practice of her teachings have exhibited before the world,—her imprudent acts and uncouth tendencies toward her three husbands, her bad treatment toward her only son and legitimate heir, to say nothing of the many other vagaries that characterized both her youth and old age, all combine to make a character that might well be compared to an eighteenth century witch. When it is recalled that her educational advantages and early social privileges were

most limited and rudimentary in character, that her only son could neither read nor write at the age of twenty-six, her three unhallowed marriages with a prospective fourth marriage to her coachman,—these facts with her home life, coupled with her sacrilegious tendencies in comparing herself with Christ in the matter of healing the sick and working miracles, should appeal to any sane person and cause at least the stronger minds of her thousands of followers to pause and think of this departed spirit only as a gigantic, simple-minded fraud.

Coueism or the Auto-Suggestion Fad: One of the latest fads to be revived is the auto-suggestion theory of M. Coue, the successor of Bernheim and Liebault. He is first and foremost an exponent of the value of auto-suggestion, which of course represents nothing new. The three main elements in his theory are: (a) the principal factor in hypnotic phenomena is auto-suggestion, rather than hetero-suggestion; (b) "the law of reversed effort" implies that so long as the imagination is adverse, the conscious will act by contraries; (c) the most important phenomena of auto-suggestion occur in the subconscious. He says that psycho-therapeutics does not demand a suggestor or an induced hypnotic state. Since the visit of M. Coue to this country his slogan "every day in every way I am growing better and better" has been extensively advertized. Whether or not his theory is understandable matters little, he has found many admirers who have enthusiastically acclaimed the advantages of his celebrated formula.

Suggestion and auto-suggestion are undoubtedly of value in medical practice, and consciously or unconsciously they have formed a part of the daily armamentarium of every physician for centuries. M. Coue has merely revived in a rather unique way something which has always been known. It has been tritely remarked that "no one knows the limits to the power of suggestion, ' but, on the other hand, no one would have the temerity to claim that either suggestion or auto-suggestion ever cured patients of frank disease.

It is a serious mistake to assume that there is no danger in fads such as Coueism. As he naively remarked in one of his lectures, "if we put a thought in the mind that is possible, it becomes a reality for us." It must not be forgotten that the average individual cannot discriminate between a "possible" and an "impossible" thought. "Many a victim of serious disease in the early stage succeeds in persuading himself for a time that there is no cause for alarm, and when finally this species of auto-suggestion fails and he is compelled to seek medical aid, it may be too late." This is especially true and has not infrequently happened in malignant disease; and therein lies the menace of such mental panaceas as that offered by M. Coue.

In justice to M. Coue let it be said that he is not a member of the medical profession. "He is quite uninformed on medicine and knows little of psychology; this would explain why he considers asthma a disease of the mind; it is also quite probable that he would regard the dyspnea of cardiac or pulmonary disease, which is so often confounded by the laity with true asthma, as a mental disorder." Such ideas are so absurd, so utterly fallacious, as to merit no consideration were it not for the fact that public danger lurks in their promulgation.

"Abramsism" or the Electronic Reaction Fad: Strange as it may appear the latest and what seems to be the most stupendous fallacy, fad, fraud or humbug emanates from within the medical profession. A western physician claims the ability to make long-distance diagnoses of various diseases, also to determine the race, age and sex of the individual, by examining a few drops of blood. However, there are certain precautions which must be observed: "The patient should face west, the blood should be taken in a subdued light, and there should be no strong red or yellow coloring material in the room." He also claims the ability to diagnose disease by inspecting the hand writing of the individual.

The following quotations are from recent editorials on this subject: "The apparatus used in physico-clinical diagnosis and treatment is known as the oscilloclast; this device is not for sale; it can only be had on lease." "What will you do with a fakir who in ninety per cent of all cases claims that the people have syphilis when there is not the slightest trace, objective or subjective, of the disease? Or a fakir who claims to be able to discover cancer fifteen years before it shows itself?" "The people who subject themselves to the Abrams diagnosis do not know that the whole thing may be a fraud, that the reliability of it is denied by ninety-nine per cent of the medical profession." Regardless of the apparent falsity of the claims made, it is said this fad has many adherents.

There are many other cults, fads and fallacies which time forbids discussing. Vitapaths, naturopaths, divine healers, faith healers, etc., are numerous. Many of them are totally ignorant of rational or scientific medicine; some are so extreme as to be classified as fanatics; others are malicious defrauders and are obtaining money under false pretenses. All such unscientific cults are a menace to society. No one should be permitted to

practice the art of healing without an adequate knowledge of the living body and its many complex structures and functions; such education is necessary whether drugs are employed or not.

"Drugless healers and secret nostrums, with fair promises delude the mind,
And thrive on all that tortures and deceives humankind;
Void of all honor and truth, avaricious and rash,
The daring, bold tribe compound their boasted trash;
Bitters, syrups, suppositories, solutions or pills,
Tempt the credulous, sick poor to trust their lying bills,
And many, many names of Shylocks turned to squires,
Aid the bold, deceptious language of these blushless liars.

How strange to think, in this nefarious trade,
That sensible men and women are duped by fakirs made;
That creatures, nature meant to clean the street,
Have purchased lands, mansions, parks and seats;
No class escapes them, from the poor man's pay
The Fakir and Nostrum trade, takes no small part away.
Down with the Osteos, Chiros, Shysters and drugless schemes,
That prey upon human credulity, and then steal their means."

Nearly all the data incorporated in this paper will be found in medical print, and I desire to thank both authors and publishers for the privilege of abstracting and reproducing the material.

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Hemorrhagic Osteomyelitis. Max Strunsky, New York (Journal A. M. A., June 23, 1923), reports a case of hemorrhagic osteomyelitis of the tibia following a fall. At operation, a cavity in the bone was found, filled with a viscid, bloody material. The cyst was curetted and scrubbed with iodin and alcohol. The incision was then enlarged over the entire length of the tibia, and the entire crest of the tibia removed. The graft was cut into fragments and dropped into the cavity, which even then was only one third filled. The patient recovered entirely in eighteen months.

INVAGINATION OF THE CAPUT COLI OF MANY YEARS DURATION: CASE REPORT.*

By J. Garland Sherrill, Louisville

Failure to observe hitherto a case of chronic invagination of the cecum, notwithstanding the comparative frequency of acute intussusception, led to the presentation of this report. An apology should be made because its recognition only occurred at operation for another affection. This may be explained in part by the lack of symptoms directly due to the invagination during recent months, and in part because of the fact that the operation was one of emergency in an adjoining city for an acute attack of cholecystitis, gall-stones,



and acute distension of the gall-bladder. The latter condition had been recognized by the attendant, but his attention had not been directed to any intestinal lesion. The abdomen was much distended and tender so that at my examination only the distended gall-bladder was detected, while the mass in the colon was not felt. There was, however, sufficient mention of intestinal prolapse in the previous history to have caused more consideration of this possibility than was given it.

A woman twenty-one years of age, married two years, mother of two children, came under observation June 22nd, 1922, with the following history:

She had jaundice at the age of five, recovering in a short time. At seven she was very ill with abdominal pain of cramping nature and with marked distension; constipation existed

*Clinical report with exhibition of speciment before the Louisville Medico-Chirurgical Society.

for a time, followed by diarrhea and bloody stools. For time she passed pure blood. Her mother described her stools as very offensive, "like something rotten or decomposed." She became much emaciated, then began to improve and in March, 1908, a mass of intestine protruded through the anus for twelve four hours. She suffered from diarrhea until the age of thirteen, then had habitual constipation. In 1916 she once more had a passive prolapse which was again replaced by her attendant without anesthesia. She still had constipated habit until the present, always requiring a purge or enema. While pregnant she had two attacks of gall-stone colic, pain being very severe with mild fever, each attack lasting about one week. On June 17th, 1922, she was seized with severe pain in the upper right quadrant, nausea and vomiting, accompanied by jaundice.

On June 22nd, 1922, she came to operation for acute distension of the gall-bladder, cholecystitis and stones. The gall-bladder was found to be greatly distended, its walls thickened and inflamed, containing a quantity of muco-purulent bile-stained fluid, and a number of gall-stones.

Owing to the previous history the right lower quadrant was examined and in picking up the transverse colon a mass was palpable within it which felt like an arm within a sleeve. This impressed us as a fleshy mass rather than a hair-ball or coneretion. The transverse colon was opened and a mass was withdrawn, pyriform in shape attached by a narrow pedicle to the colon near the hepatic flexure. This mass was 24 cm. in length, covered with mucous membrane and was apparently the inverted caput coli. Near the distal or large end was a small opening evidently the ostium of the appendix extending from which the cord-like appendix could be felt beneath the mucosa. About 4 cm. above this opening was another of larger size about 12 mm. in diameter, marking the extremity of a canal 8 cm. in length, lined inside with serous membrane and on its surface with mucous membrane, probably being the remains of the ileo-cecal valve and a portion of the ileum left after the sloughing process had completed its separation and formed a new ostium from the ileum into the colon. After determining the absence of any intestinal lumen within this mass it was tied off and excised and the wound in the colon sutured.

The patient made a very satisfactory recovery from the operation and expressed herself as being able "to have a bowel movement without taking medicine for the first time since she was ill as a child." Her weight previous to operation was 113; present weight 130, a gain of seventeen pounds.

December 6th, 1922: Her general condition shows much improvement.

DISCUSSION

L. W. Frank: Dr. Sherrill has reported a very interesting and unusual case. His patient must have had intussusception in childhood with separation of the intusseptum and spontaneous recovery. While such cases sometimes occur they are very rare. From the history and the specimen exhibited there is no question about the child having had intussusception with protrusion of the intestine through the anus.

The interesting point to me is the re-establishment or reformation of the ileo-cecal valve, which apparently must have occurred, as the ileum has prolapsed into the caput coli.

Dr. Sherrill is to be congratulated upon the successful result secured in this case.

J. G. Sherrill (closing): In my experience the case reported is in some respects unique. Of course we have all read of cases of intussusception being relieved by sloughing and re-establishment of the intestinal lumen, but such instances must be extremely rare. It has never been my fortune to encounter another case of similar nature where the ileum caput coli and appendix were involved in the invagination to such a distance as found here. At first I was unable to determine whether this was a congenital malformation or whether it was an intussusception, but finally concluded it was the latter, and after satisfying myself of this, the intussuscepted portion was ligated and removed. The ileum was pulled through the ileo-cecal valve and along with it the caput coli and appendix. Sloughing evidently occurred at the point of entrance into the colon and agglutination occurred at that point allowing passage of fecal material. The ileo-cecal valve is attached to the portion excised.

The remarkable feature is that the woman made a very satisfactory recovery from the two operations and afterward was able to have alvine evacuations without the use of purgatives which had been necessary since she was a child.

Milk Transmission of Pollen Hay-Fever.—Herrmann asserts that ingestion of milk from a cow that has eaten ragweed tops produces clinical hay-fever within one-half hour after ingestion of the milk. Absence of gastro-intestinal symptoms following ingestion of one glass of milk and the appearance of selective anaphylactic phenomena in the upper respiratory tract may be due to chronic irritation and decreased resistance of tissues involved. Ragweed pollen protein is found apparently unchanged in the milk of cows that have eaten ragweed tops some hours earlier.

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ANNUAL MEETING, CRAB ORCHARD SPRINGS, SEPTEMBER 17, 18, 19, 20, 1923

COUNTY SOCIETY REPORTS

Rockcastle, Lincoln and Garrard. The Tri-County Medical Society composed of physicians of Rockcastle, Lincoln and Garrard, held their first regular meeting at Crab Orchard Springs Hotel on May 31st., with the following visitors and members present: Doctors A. T. McCormack, Lillian South, Virgil Simpson, Wallace Frank and Walter Hume, of Louisville; Woolfolk Barrow, Walter S. Wyatt, Ernest Bradley, H. T. Thornburg, and La Rue, of Lexington; Thompson, of Mt. Sterling; J. G. Carpenter, E. J. Brown, W. B. O'Bannon, J. F. Peyton, D. B. Southard, Lewis Jones, Hugh Reid, of Stanford; W. J. Childers, W. T. Murphy, of Hustonville; M. Lee Pipes, of Moreland; J. T. Hammonds of Junction City; Lee Chestnut, Walker Owens, L. J. Lovell, T. Pennington, of Mt. Vernon; J. A. Harmon, M. M. Phillips, O. A. Boatman, W. J. Edmiston, of Crab Orchard; C. B. Owens, of Brodhead; C. G. Daugherty and Orr, of Paris; J. B. Kinnaird, W. M. Elliott, J. E. Edwards and V. G. Kinnaird, of Lancaster.

An interesting and scientific program was rendered. Dr. Brown, of Stanford, presided and Dr. Jones, of Stanford acted as secretary.

A. T. McCormack, Secretary of Kentucky State Medical Association opened the meeting with a talk upon the work of the State Board of Health. Doctors O'Bannon, Lovell, Carpenter, South and V. G. Kinnaird participated in the discussion.

Wallace Frank, of Louisville, read a paper upon Toxic Goitre in which he discussed the numerous phases of goitre and the present trend of surgical treatment. Discussed by Doctors Barrow, Bradley, Simpson and Hume.

Virgil Simpson, of Louisville, delivered an interesting address upon the subject of "Insulin in the Treatment of Diabetes." This new remedy promises to revolutionize the treatment of Diabetes and save many valuable lives.

H. T. Thornburg, of Lexington, delivered a short talk upon the Eastern Kentucky State Hospital and responsibilities of the profession.

The dinner served by our faithful friend, Joe Haselden, was excellently prepared and was enjoyed by all present.

These meetings will be held each year at Crab Orchard.

The following resolutions were passed:

Be it resolved that the members of the Tri-County Medical Society recognize and appreciate the faithful work of the secretary of the Kentucky State Medical Association, Dr. A. T. McCormack and we go on record today endorsing his candidacy for re-election at the state meeting in Crab Orchard in September.

LEWIS JONES, Secretary.



Frank Boyd

PRESIDENT KENTUCKY STATE MEDICAL ASSOCIATION, 1923

KENTUCKY MEDICAL JOURNAL

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EDITORIAL

OUR PRESIDENT

Dr. Frank Boyd, of Paducah, will assume the presidency at the Crab Orchard meeting of the State Association.

Dr. Boyd was born in Hamilton County, Illinois, and received his college education at Ewing College, Illinois. He graduated in medicine in 1889 at Rush Medical College. In 1895, he took two semesters post-graduate work in Berlin.

Dr. Boyd located in Paducah in 1889 where he established the first private hospital in Western Kentucky. He was Medical Referee of McCracken County from 1899 for many years and was County Health Officer for several years. He was a Major in the Medical Department of the Spanish American War, being Surgeon of the Third Kentucky Infantry. He was in charge of the reserve ambulance and reserve hospital at Chickamauga, and was Chief Medical Officer of the First Army Corps in Porto Rico. He has served as president of the McCracken County Medical Society and of the Southwestern Kentucky County Medical Society and is a member of the American College of Surgeons. He was Orator in Surgery of the Kentucky State Medical Association.

Dr. Boyd has for many years been the Division Surgeon for the N. C. & St. L. Railroad, Chief Surgeon for the Paducah Electric Railway, and Surgeon for the Illinois Central Hospital in Paducah. Dr. Boyd has at various times been secretary of the Board of the Riverside Hospital, Staff Surgeon of the Riverside Hospital and Police Commissioner of Paducah.

No other member of the profession has more willingly given of his time and influence to advance everything for which the medical profession stands than the incoming president.

TO GOLFERS

Members of the State Medical Association, who play golf, will be interested in the announcement that Dr. W. Barnett Owen, of Louisville, will be chairman of the contest for the Estill cup.

Those who desire to enter, should communicate with Dr. Owen at the Francis Building, Louisville, arranging to play either Sunday or Monday before the meeting.

THE PROGRAM

The preliminary program of the Crab Orchard Springs meeting is published under the heading of Official Announcements.

We can say without invidious distinction that this is the best program that has ever been offered to the medical profession of the State. It was prepared and the essayists were selected by Drs. Boyd, the president-elect, and Jackson, both of Paducah, the members of the Committee on Scientific Work. It offers a liberal post-graduate course and the Committee trusts that the members will come to the meeting prepared to discuss the various subjects which will be very briefly presented by the essayists. Practically all of the papers are already in the hands of the Secretary and all of the essayists will be present.

The Council has provided for two Annual Orations. One will be delivered on Tuesday in the evening by Dr. Hugh Cabot, the distinguished Dean of the Medical Department of the University of Michigan. Dr. Cabot is one of the most versatile and forceful men in the profession and it is a matter of regret that his message cannot be heard by all who are interested in Kentucky's welfare.

On Wednesday evening the Annual Oration will be delivered by Dr. J. B. Kennedy of Detroit, who has for many years been the grand old man of Michigan medicine. Dr. Kennedy is one of the most influential physicians in America. He has few peers as orator or statesman and it is a great privilege to have him with us this year.

The Orator in Medicine is Dr. W. L. Tyler, of Curdsville. Dr. Tyler belongs to the finest type of general practitioner which has from the beginning furnished the leadership in Kentucky medicine.

Dr. E. M. Howard, of Harlan, will deliver the Oration in Surgery. One may recall that until only a few years ago, and for the first hundred years of Kentucky's history, there were only three physicians in Harlan County. It is indicative of the tremendous development of medicine in Eastern Kentucky that Dr. Howard is one of the proprietors of the best appointed hospitals in the State and has also developed a model lying-in hospital.

The orations of Drs. Howard and Tyler will preserve the high standard of these addresses, which have been the milestones in the history of Kentucky for seventy-three years.

CRAB ORCHARD

In many respects the Seventy-third Annual Meeting of the Kentucky State Medical Association, which will be held at Crab Orchard Springs September 17th-20th, inclusive, will be the most important in its honorable history.

There never has been a time in the history of America when there was so much political unrest. The reaction of the War has upset men's minds, and it is of the utmost importance that the physicians of Kentucky assemble together for the purpose of taking counsel so that the interests of the medical profession and of the public who are dependent upon them for both the treatment and prevention of disease be preserved. A carefully organized, well-managed campaign is underway to bring about serious divisions of the profession itself, which are planned to react upon legislation in such a way as to destroy the influence of the profession and substitute for its leadership in medical and health matters that of a bunch of practical politicians. This whole matter should be frankly discussed at Crab Orchard and the profession should determine just what it desires done. There is no danger of any adverse legislation if the profession is aroused but almost anything may happen if they fail to take the necessary steps in advance. For this reason, the officers and Council of the Association have requested the editor to urge every physician in the State to arrange to be present at Crab Orchard throughout the meeting so that what is done will be done by the whole profession and so everyone will understand the entire situation.

Crab Orchard Springs is located in Lincoln County and is on the Knoxville branch of the Louisville & Nashville Railroad. It is 115 miles Southeast of Louisville; 48 miles South of Lexington and 139 miles South of Cincinnati. It is on the Dixie, Shortcut and Booneway Highways and is easily reached by stage from Lexington or Danville. It is located over 1,000 feet above sea level and lake and mountain breeze make the evenings and nights cool. The great old brick building is the example of the attractive type of old Southern architecture. From the broad verandas the beautiful Dix River Valley and the grand sweep of the Cumberlands is in view. The rooms are large and airy and every one is an outside room. The rates are Four, Five and Six dollars per day on the American plan. It is suggested that members write in advance to the Crab Orchard Springs Hotel Co., Crab Orchard, Kentucky, making reservations for the space they desire to occupy. There is a beautiful golf course at the hotel and the Annual Contest for the Estill Cup will be held on the day preceding the meeting.

Our members will enjoy this meeting because of the delightful place in which it will be held, and the results of the deliberations of the Association this year will make medical history not only for Kentucky but for all of our states.

REDUCED RATES TO CRAB ORCHARD

Physicians planning to go to Crab Orchard by railroad will be pleased to learn that reduced rates are provided to this very popular summer resort from every point in Kentucky and that it will not be necessary to bother about a certificate to secure any reduction in fare since the special round trip rate is provided for all visitors to Crab Orchard during the summer and until September 30th.

At some of the previous meetings of the State Association there has been some confusion in securing sufficient certificates to guarantee the rates as provided for in the agreement with the Railroads and in this has nearly always resulted from the fact that many of the visiting members failed to qualify when purchasing their tickets. Therefore, the members are urged to bear in mind that it is only necessary this year when purchasing tickets to apply for the regular summer round trip rates to Crab Orchard and that a certificate will not be necessary.

THE SECTIONS

The House of Delegates will meet on Monday afternoon, September 17th. On Monday, also, there will be meetings of the sections on diseases of the eye, ear, nose and throat, pediatrics and urology. Efforts are being made to organize other sections. The general practioners of the State are urged to get to Crab Orchard early on Monday so as to be present at these section meetings. The latest advances in the varions specialties will be presented and discussed by authorities and all of them will be of interest to physicians generally.

In the newly organized Section on Urology, for example, the following subject will be disenssed:—

Acute Gonorrhea; Diseases of the Posterior Urethra; Bladder Pathology, Symptoms and Treatments; Renal Tuberculosis; Ureteral Kinks and Strictures.



EAST VIEW OF MAIN BUILDING



COOL AND BROAD VERANDAS ON ALL BUILDINGS

THE REPORTS

On other pages of this issue will be found the Constitution and By-laws of the Kentucky State Medical Association as adopted in 1902 at Paducah, with all the amendments that have been made since. Members of the House of Delegates are especially urged to familiarize themselves with it, but it will be found interesting reading by everyone who receives the Journal.

It is especially important that the reports of officers and particularly the financial report of the Secretary and Treasurer, as audited, be studied in detail by every member of the Association. From time to time there has been some criticism after the meetings of financial items. Criticism then is largely futile. The officers of the Association can expend no money except with the approval of the House of Delegates and the time to consider expenditures is before and during the meeting. In the Auditor's report will be found an exactly itemized statement of every penny expended. The House of Delegates may discontinue any activity of the Association and stop any expenditure of which they disapprove. The Kentucky State Medical Association is the most democratic organization in the world and it is successful only in proportion as it expresses the will of the members.

It is suggested that every local society interested in any particular activity which the Association has on should talk the matter over fully with their delegate to the end that their views may be presented to the House of Delegates.

At Crab Orchard Springs there will be ample time for the meetings of the House, and Reference Committees will be appointed by President Frank for the consideration of practically every phase of professional activity.

WOOLFOLK BARROW

The medical profession and the State of Kentucky has never been shocked more or sustained a greater loss than in the tragic death of Dr. D. Woolfolk Barrow, eldest son of Dr. David Barrow, Lexington. The shocking details of his death as a result of an automobile accident are familiar to all. On his way to a camping party with his family, his auto filled with camping outfit, besides his eldest son, Woolfolk, Jr., and his two boy companions, while going down a hill near Boonesboro, in some unexplained way the steering gear became blocked and control of the machine was lost. Crashing into a rock fence, overturning the machine and throwing him beneath, caused fracture of the skull and other injuries which resulted in his death a few hours afterward.

The resolutions passed by his own County and City Medical Society, the Staffs of St. Joseph and Good Samaritan Hospitals, of which he was a member and the editorials in the daily papers, express the feelings of his co-workers and the community as well as it could be told in words, but in a tragedy such as this the English language is poverty stricken to describe the loss to his family, his profession and the community in which he lived.

When the editor of this Journal wrote me August 7th, asking me to write an editorial, he said, "no death which has occurred in the state has been such a shock to the profession. I felt that there was more promise in D. Woolfolk Barrow than in any surgeon in Kentucky because he had the proper vision of farsightedness which has always characterized his father." In saying this he expressed the sentiment of hundreds of the medical profession and others who knew him.

D. Woolfolk Barrow was born in New Orleans, La., 1882 and received his early education in that city. When still a boy his parents moved to Lexington where he attended the University of Kentucky, taking his medical course at the University of Michigan where he graduated in 1908. Later in a competitive examination for interneship at the Post Graduate Hospital in New York City, he received the highest mark of those competing and served as interne two years, after which time he came to Lexington and began practice with his father, with whom he was associated until his death.

Among the medical societies to which he belonged were the Southern Surgical Society, the American Medical Association and the Kentucky State Medical Society. He was also a member of the Cancer Research Commission and as a representative of this organization did much to check the growth of that disease. He had been interested in the treatment of cancer for years, making that his specialty.

In a brief notice such as this many lessons exemplified in his successful professional life occur to me that would be of benefit to the living, especially the younger surgeons, but these will be told in detail by future writers. though this much I must say, as a surgeon and technician I have not seen his superior. His loyalty to his profession, strictly ethical conduct and intense interest in his work stamped him a worthy example for any young man entering the profession of medicine and surgery. Only a day or two before his death in looking at a framed copy of the Ten Commandments of Medical Ethics on the wall of my office he remarked that "it is beginning to be appreciated more by me each day, but I had to practice medicine several years be-

fore I realized its true meaning." He was a man of high ideals and rapidly becoming an increasing honor to our profession. Although only forty years of age he had already made for himself an enviable reputation as a surgeon. No physician or surgeon in the state contributed more of his time and talent towards relieving the scourge of cancer and none other had more effectually contributed to the education of the masses the danger of this disease than he. It can be truthfully said that his profession was no mere device with him to be used to break the drab monotony of life—it was the essence of his religion. He was not acutated by mercenary motives but by a sincere desire to serve. He met obstacles with a fortitude before which many in his profession have fallen, but he made of them stepping stones by which he climbed to the honored position he occupied. While those of us intimately associated with him in the fight against disease and death and for the propagation of health and happiness miss him and mourn his loss, ours is nothing compared to that of his father, whose assistant and coworker he was. His place was on the opposite side of the operating table and he anticipated accurately and deftly every need of the operator, cheerfully shouldering the drudgery of the details of the after care of the operation so necessary to success. His ideal as expressed to me was "to acquire the love and confidence of the people, the diagnostic ability and surgical judgment possessed by his father." And just as the mantle worn by that father for nearly half a century was slipping to the shoulders of the son, came the end.

D. Woolfolk Barrow is gone and before his going we are dumb. While we know that death is as good as life and just as natural yet as we are appalled by the sudden tragic ending. He was young in years but the measure of a man is not the number of his calendar years, but what he put into them and by this standard his life was full. The loss of his family is our loss, yet both they and we are richer in experience because we have known and loved him. May the memory of his life be a benediction to all who knew and loved him.

Upon the new-made grave of Woolfolk Barrow The Herald lays the tribute of its admiration and the emblem of its sorrow.

High gentleman, wise physician, skilled surgeon, dutiful citizen, Woolfolk Barrow long since won access to the hearts of his fellow Kentuckians. Only life was needed that his sphere of usefulness should become coextensive with his strength and capacity for labor. Of winning personality, of proven ability, with the traditions and the accomplishments of the noble profession he adorned, he was destined for the distinction that comes only from work well done.

Young, with strength and vigor and surge for service that found outlet in many varied interests, he was first of all and above all the surgeon and the healer. To him many owe life, many owe freedom from the consuming and devouring scourge he was ever combatting with the knowledge gained in school and clinic and the passion to relieve pain and defeat death that marked his whole career.

The Herald does not dare intrude in the places made sacred by his love and companionship. But to those to whom his death brings the blackness of the pit some light will in time go from the deep affection this community gave to him and gives to them.—Lexington Herald.

The tragic death of Dr. Woolfolk Barrow of Lexington takes from the field of surgery in Central Kentucky one of its most skillful practitioners. The son of an eminent surgeon, Dr. Barrow gave promise of rivaling his father. In courtly manner he was in every way his father's son. With that gentleness of the Kentucky gentleman he was greatly assisted in taking comfort to the sickroom, and his natural sympathy and humanity no doubt aided him as a diagnostician.

In the midst of his labors, just as he was making his place in the world, death came with unwanted suddenness. Still a young man, he had traveled far in his profession and there was every promise before him. An automobile accident—and his life's work was ended.

Kentucky in medicine and surgery can compare favorably with any State in the Union for its number of capable and highly skilled practitioners. Among younger men there was none who had greater promise than Woolfolk Barrow.—Courier-Journal.

The sudden and tragic death of Doctor Woolfolk Barrow has been a very great shock to the people of Lexington and a far larger community who knew and admired him as a man and a surgeon. Representing not only the best that is in his great profession, but the best that is in manhood and citizenship, the loss of such a man cannot be compensated and his place cannot be filled. His reputation as a skilled surgeon was more than Statewide, and his work had brought him into the foremost rank of the profession which he adorned and to which he had given his complete devotion.

He had a great capacity for friendship, was always loyal to those to whom he was attached, and awakened their sincere affection and deep respect. His tastes were domestic, and no man could have been more faithful and

devoted within the family circle where he found his chief satisfaction and loved most to be.

The Leader expresses to the members of his family and his many friends the sincerest sympathy in such an hour of loss and sorrow, and voices the feeling of the entire community that a wise, gentle, clean, upright, and extraordinarily useful man and citizen has been taken from us.—Lexington Leader.

J. A. STUCKY.

A DISTINGUISHED GUEST

Dr. George E. Shambaugh, Chicago, one of the most distinguished members of the profession of that city, will be the guest of the Ophthalmological and Otolaryngological Society Section of the State Medical Association at Crab Orchard Springs.

This section, as the other scientific sections, holds its meeting on Monday, September 17th.

It will be a privilege for the members of the profession of the State to hear Dr. Shambaugh. His topic will be Clinical Problems of Suppurative Otitis Media.



DR. BARNETT OWEN
LOUISVILLE, KY.
Vice President Kentucky Medical Association



DR. C. R. TANNER
HENDERSON, KY.
Vice President Kentucky State Medical Association



DR. WILLIS P. MOSS
CLINTON, KY.
Vice President Kentucky Medical Association



DR. E. M. HOWARD
HARLAN, KY.
Orator in Surgery



MAIN DINING ROOM



GOLF COURSE SIXTH GREEN

SCIENTIFIC EDITORIAL

OBSTETRICAL COLUMN

Edited By Alice N. Pickett
Director of the Prenatal Clinic Louisville City Hospital.

Our probable eight or nine cases of syphilis in 31 mothers delivered, gives us a most distressing percentage this month. This is large enough to accent, to even the most optimistic thinker, the importance of routine examination of pregnant women for this disease. The babies that died were lucky to have met this fate rather than the handicaps of untreated congenital syphilis. When nature arranged that syphilis bring about abortion, miscarriage, prematurity and the early death of luetic babies, she granted to the race one of her greatest safety measures. But for this provision there would not be enough normal people in the world to take care of the physical weakings and mental degenerates. The most unfortunate victim is the little child whose blow is not heavy enough to kill but too heavy for health and normal development. The fact that two perfectly normal full term children were born of 4 plus mothers, both mental defects, points to the truth that we cannot judge by appearances. A Wasserman and a careful history are indicated in every case of pregnancy. We often find great havoc wrought on children whose mothers have never had a miscarriage or other evidences of syphilis. As a matter of fact the great majority of the luetic mothers of our clinic give an absolutely negative history for syphilis. In the near future we will be able to give a much more complete history of these mothers and their babies. Our mother and child division of the venereal clinic is developing very nicely and our records will be worth while. We will make it a routine to have Wassermans taken on apparently normal babies of 4 plus mothers while the children are still in the hospital.

We often have doctors ask, "How do you prevent broken homes when you tell mothers they are syphilitic?" I can only say that among more than two thousand maternity cases handled in the City Hospital, we have had to make this disclosure to a great many women. Our nurses and social workers have never been able to discover a single home broken from this cause or a home rendered apparently less happy. We are very careful, however, to present the matter to each mother in the kindest and most sympathetic way. This is always done by the director of the clinic. The story goes about as follows:—"Mother you know we examined your blood the first day you were in the clinic. We did this because there is one blood disease of the mother which is very dangerous for the unborn baby. We call this disease Syphilis. It is one of the "bad" diseases which women sometimes catch from their husbands, but it can also be inherited from parents and grandparents. We also get it from dirty toilets, towels, etc. It is no disgrace for a good woman to get this disease but it is a very great misfortune. It is the frequent cause of miscarriage and premature babies. It causes children to be sickly and to be high strung nervously. It sometimes causes feeble-mindedness, deformities or blindness. So you see a baby whose mother has this disease is running a great risk while he lives in the mother's womb. When we examined your blood we found you have this disease and we want you to be treated for it. If you will take the proper care we can promise you that your baby will be alright. We have a Clinic for mothers like you and their children. Nobody else comes to this clinic. Will you come on Thursday afternoon and do just as the doctors say? You see the baby is lying there perfectly innocent and helpless, and you are the only person in the world who can make things safe for him. I hope you will not feel that you are different from other women because you have this disease. Many of us have it and know nothing about it. For hundreds of years the whole world has stood for the immoral lives of boys and men. We women have stood for it as much as the men,—so we are partly to blame too. But a better day is coming, and we are beginning to train our boys so that they will have a much greater protection against temptation than our husbands and our brothers had."

I have never seen a woman receive such a disclosure with resentment. We have almost no trouble in getting them to take treatment. Our only grave difficulties have been with the mentally unfit. We have behind us, in the solving of this problem, the greatest force on earth,—which is Mother Love. This method holds good among the cultured and well to do, as well as among the poor and ignorant. As a matter of fact most women of today know something of venereal diseases and they are more than glad to have the weight of secret fear and doubt lifted from their minds.

I would like to make one suggestion as to technique in the taking of a specimen of blood for a Wasserman test. The needle, syringe and receiving tube should be perfectly dry. The least film of moisture may spoil this very delicate test and cause a positive blood to give a negative reaction. For this reason it is well to use the dry sterile needle, instead of the Luer syringe which has been recently boiled in the office. At the City Hospital we

Obs. Serv. Lou. City Hosp. 6-11-23—6-30-23. Dr. Chas. Fleshman, Int. Ext. P. C. Neely.

Hospital No.	Deliveries Reg. No.	Para	P. C. Care	B. P. R.	Wass.	Prenat. Syph. Tr.	Ch. of Pelv.	Ch. of Delv.	Pos.	Wt. Baby	At Term	Fate of Baby	Lac.	Result of Rep.	Condition On Discharge Mother	Baby
1.	50836	3	Clinic	120-136	Neg		Normal	Spontaneous	L. O. A.	8- 5 3/4	yes	Living	None		Fair-retro.	Good
2.	50636	5	Clinic	Normal	Neg		27-29-22	Spontaneous	O. A.	7-14	yes	Living	None		Fair	Good
3.	50868	2	Clinic	110-130		4 shots 606	Somewhat doubtful	Spontaneous Flat	L. O. A.	7-10	yes	Living	None		Good	Good
4.	50903	3	Clinic	112-150	Neg		23-26-22-11	1/2		2-15 (?)	6½ to 7 mos.	1st Living 2nd Dead	None		Fair	2nd Ch. Dead
5.	50928	6	No		Neg		?	Spontaneous	O. A..	7-14	yes					
6.	50941	1	Clinic	122-155	Neg		Genl. Contr. Mild Degree	Spontaneous	O. A.	6- 6	yes	Living	None		Good	Good
7.	50953	2	Clinic	Normal	Neg		Normal	Spontaneous	R. O. P.	8- 3 3/4	yes	Living	None		Good	Good
8.	50981	1	No		Neg		?	Forceps	L. O. A.	7- 9 1/2	yes	Living	1st degree	No post partum		Good
9.	50968	2	No		?		?	Spontaneous	O. A.	2- 1	6 mo.	Lived 20 hours	None		Left Before Discharge	Dead
10.	50954	1	Clinic	Normal	Neg		Genl. Contr. Mild Degree	Spontaneous	L. O. A.	6- 1 1/2	yes	Living	None		Good	Good
11.	50967	8	No			None	21-26-22	Spontaneous	O. A.	8- 3	yes	Living	None		Good	Good
12.	51025	12	Clinic	Normal	Neg		Normal	Spontaneous	O. A.	8- 5 3/4	yes	Living	None		Good	Good
13.	51047	1	No		Neg			Spontaneous	?	4- 7	yes	Living				
14.	51038	1	Clinic	125-150	Neg		Genl. Cont. Mod. Degree	Spontaneous	L. O. A.	7-15	yes	Living	None		Good	Good
15.	51051	1	No		Neg		21-26-19	Spontaneous	L. O. A.	6-10	yes	Living	1st degree	Good	Good	Good
16.	50955	1	Clinic	110-132	Neg			Caesarean Section	R. O. P.	8- 3	yes	Living	None			
17.	51112	3	No		Neg		?	Spontaneous	O. A.	7-14 1/2	yes	Living	None		Good	Good
18.	51105	5	No		Neg		?	Spontaneous	O. A.	7- 1	yes	Living	None		Good	Good
19.	51145	2	No		Neg		?	Spontaneous	L. O. A.	7- 4	yes	Living	None		Good	Good
20.	51124	6	No			None	Arch and Spines Fair	Spontaneous	R. O. A.	7- 4	yes	Living	None		Fair	Good
21.	51154	6	Clinic	Normal		Only in Clinic 2 times	Normal	Spontaneous		6- 7	yes	Living	None		Good	Good
22.	51146	5	No			None	Arch and Spines Fair	Spontaneous	S. R.	6- ?	8 mo.	Dead	None		Good	Dead
23.	51178	2	No			None		Spontaneous	O. A.	3- 8	7 mo.	Dead	None			Dead
24.	51186	1	Clinic	120-135	Neg			Spontaneous	O. A.	7- 6	yes	Living	None		Good	Good
25.	51199	10	Clinic	130-160		2 shots 606	Normal	Spontaneous	O. A.	7- 1	yes	Living	None		Good	Good
26.	51210	3	No			None	Normal	Spontaneous	O. A.	5-14	yes	Living	None			
Home Deliveries																
27.		10	Clinic	Normal	Neg		Normal	Spontaneous	L. O. A.	?	yes		None		Good	Good
28.		4	Clinic	Normal	Neg		Somewhat Contr.	Spontaneous	R. O. A.	8- 0	yes		None		Good	Good
29.		12	No		Neg			Spontaneous	Breech	6- ?	7 mo.		None		Good	Dead
30.		7	Clinic	Normal	Neg		Norm. exc. Breech Pos.	Spontaneous	Breech	7- ?	yes		None		Good	Good
31		3	Clinic	Normal	Neg		Normal	Spontaneous	R. O. A.	7- ?	yes		None		Good	Good

No. of Clinic cases 17.
No. of fetal deaths 5.
No. of Puerperal infections 0.
No. of Eclampsia 0.
No. of Maternal Syphilis 8.

No. of Clinic Cases 14.
No. of Post. Partum Hemorrhages 2.
No. of Retroversion on discharge 3.
No. of Imperfect union following repair ?

are using syringes and needles which have been subjected to dry sterilization.

In the July number we accented the importance of prenatal care and outlined the routine of the prenatal clinic of the Louisville City Hospital. The children's bureau of the State Board of Health has gotten out an excellent series of letters on Prenatal Care. These letters are sent at weekly intervals to any woman desiring them. The Bureau will send a set of these letters to any doctor free of charge and will be glad to receive his criticisms or suggestions for revision. Many physicians are sending in the names of all their obstetrical cases and asking that the letters be forwarded directly to them as a means of saving valuable time in explanation during office hours.

SYPHILIS

Case No. 3. Hospital No. 50868. Para 2. Dr. Neely, Interne; Dr. Rubel, staff. A clinic case, Wasserman 4 plus, four prenatal intravenous injections of neo-salvarsan. A living baby was born at term weighing 7 pounds and 10 ounces. It was discharged in good condition, showing no evidences of syphilis.

Case No. 10. Hospital No. 50967. Para 8. Dr. Fleshman, Interne; Dr. Rubel, staff. This was a feeble-minded woman. She had normal delivery, the baby weighed 8 pounds and 3 ounces at birth and 9 pounds and 9 ounces on discharge. Neither mother or child showed any evidences of syphilis. The mother's Wasserman taken during the puerperium gave a 3 plus. This mother and child will be put in care of venereal clinic along with the other children of the family.

Case No. 20. Hospital No. 51124. Para 6. Dr. Fleshman, Interne; Dr. Rubel, staff. This case was admitted to the hospital in labor and had no prenatal care. One hour later a living baby was born spontaneously, weighing 7 pounds and 4 ounces. Mother was sub-normal mentally, her patella reflexes were absent. Wasserman 3 plus. With the exception of a sealiness of the skin, the baby showed no evidences of syphilis.

Case No. 21. Hospital No. 51154. Para 6. Dr. Fleshman, Interne; Dr. Rubel, staff. This patient gave a 4 plus Wasserman in clinic but there was no time for prenatal treatment. She delivered at term, a living baby weighing 6 pounds and 7 ounces. The baby showed no gain in weight during his two weeks in the hospital but otherwise gave no evidence of syphilis.

Case No. 22. Hospital No. 51146. Para 5. Dr. Fleshman, Interne; Dr. Rubel, staff. No prenatal care. Macerated fetus premature at 8 months. Mother's Wasserman 4 plus. Adherent placenta removed manually after a forty minute third stage. Mother's temperature rose to 101 during the puerperium.

Case No. 23. Hospital No. 51178. Para 2. Dr. Fleshman, Interne; Dr. Rubel staff. No prenatal care. Premature delivery at 7 months. Macerated fetus. Weight of the baby 3 pounds and 8 ounces. Mother's Wasserman 4 plus.

Case No. 25. Hospital No. 51199. Para 10. Dr. Fleshman, Interne; Dr. Rubel, staff. Prenatal Wasserman 3 plus. Prenatal treatment consisted of 2 injections of neo-salvarsan. A living baby was born at term, weighing 7 pounds and 1 ounce. A dryness of the skin was the only sign of syphilis shown by the child.

Case No. 26. Hospital No. 51210. Para 3. Dr. Fleshman, Interne; Dr. Rubel, staff. No prenatal care. Spontaneous delivery. Weight of the baby 5 pounds and 14 ounces. Mother's Wasserman 4 plus. Mother and child referred to venereal clinic for care.

Prematurity. Probably due to Syphilis.

Case No. 9. Hospital No. 50968. Para 2. Dr. Fleshman, Interne; Dr. Rubel, staff. No prenatal care. Precipitate delivery in the hospital. Fetus about 6 months, lived 20 minutes. No Wasserman was made.

Still—Birth—Prematurity. Cause unknown.

Case No. 5. No prenatal care. Externe found a 7 months fetus had been delivered before his arrival. It had been dead in the utero for several days according to the mother's history and the appearance of the child. A Wasserman made during the puerperium was negative. The externe thought the baby's death was due to hard work which the mother had been subjected to during her prenatal period.

Forceps.

Case No. 8. Hospital No. 50981. Para 1. Dr. Fleshman, Interne; Dr. Rubel, staff. No prenatal care. No measurements recorded. Low forceps applied because of failure of descent in the second stage. Morphine was given during the second stage and one hypodermic injection of pituitrin M3. A living baby was delivered by low forceps, weighing 7 pounds and 9½ ounces. Mother and child discharged in good condition.

Retained Placenta—Twins.

Case No. 13. Hospital No. 51047. Para 1. Dr. Fleshman, Interne; Dr. Rubel, staff. This patient was brought into the hospital following the delivery of twins by a private physician. The doctor reported post-partum hemorrhage. He thought the placenta had been discharged intact. There was no considerable bleeding on admission and the pat-

ient was kept under observation until the end of the second day when she had a chill and a sudden rise in temperature to 104. She was taken to the operating room and the uterine cavity swabbed out with alcohol sponges, small pieces of tissue resembling placenta being removed with some retained blood clots. Her temperature dropped to normal on the second day after the operation and the patient and her babies were discharged from the hospital in good condition.

Twins. Prematurity.

Case No. 4. Hospital No. 50903. Para 3. Dr. Fleshman, Interne; Dr. Rubel, staff. This patient was a big heavy woman admitted to clinic complaining of abdominal distress. Her abdomen was very large and tense. It was impossible to outline the fetus. She was sent to x-ray with the probable diagnosis of twins. From the x-ray plates it was impossible to make out more than one child though the x-rayist thought we were dealing with a fibroid uterus and probably a multiple pregnancy. The unusual thickness of the abdominal walls and the excess of fluid accounted for the poor detail of the plates. She was admitted to the hospital for observation. After 13 hours of first stage pains, a living baby was born spontaneously in cephalic presentation, weighing 2 pounds and 15 ounces. Five hours later a second baby was born by breech extraction, shoulder and arm presenting. This child was still-born. The babies were apparently 6½ months. The living child was treated for one month as a premature in the hospital but died at the end of that time of inanition. The mother showed on post-partum examination a fibroid of uterus about the size of an orange.

Caesarean Section.

Case No. 16. Doctors Speidel and Rubel. This patient was a big heavy colored woman, Para 1, who was carefully watched through her prenatal period. The pelvis showed a narrow outlet but the inlet was thought to be something like normal. External conjugate was 22 c.m. The promontory could not be felt, possibly because of the contracted outlet. She had quite a marked lardosis. Some difficulty during the second stage was anticipated at delivery but we did not fear a difficult engagement. However, during the last six weeks of prenatal care we noticed that the baby's head was not fitting down into the pelvis but persistently remained floating above the symphysis. This patient was a primipara and the baby unusually large. We feared she might come to Caesarean Section and induced her to come into the hospital for observation. She was given the test of labor for 48 hours with occasional rest periods induced by the use of morphine. At the end of two days the head was poorly fixed and the bag of waters unruptured. At this stage Caesarean Section was decided upon. The low cervical operation was chosen because of potential infection, several vaginal examinations having been made. A living baby was delivered, weighing 8 pounds and 3 ounces. The child showed slight asphyxiation but its resuscitation offered no difficulty. The unmolded head showed that there had been no attempt at fixation in the pelvis. On the 16th day the patient developed a low grade phlebitis involving the veins of the left leg. This condition has not yet cleared up and prevents her discharge from the hospital. In other respects her convalescence has been uneventful.

Intracutaneous Reactions in Pertussis. Thomas G. Hull and Ralph W. Nauss, Springfield, Ill. (Journal A. M. A., June 23, 1923), used nine different preparations of pertussis vaccine, and 341 injections were made intracutaneously. The work was done at an institution where an epidemic of whooping cough was developing. The ages of the children tested in most instances were from 8 to 12 years. The results of the investigations recorded do not indicate that preparations of pertussis bacilli can be used intracutaneously to diagnose whooping cough. Freshly prepared suspensions, suspensions 3 years old, suspensions killed by heat and suspensions killed by chemicals gave results that were conflicting. Nearly all children, whatever their ailments, gave positive reactions. Whooping cough patients at times gave negative reactions, however.



DR. W. L. TYLER
CURDSVILLE, KY.
Orator in Medicine



SEVENTH GREEN, NORTH SIDE OF LAKE



FIELD OR MAGNESIA SPRING

OFFICIAL ANNOUNCEMENTS

PRELIMINARY PROGRAM FOR KENTUCKY STATE MEDICAL ASSOCIATION

CRAB ORCHARD SPRINGS
SEPTEMBER 17, 18, 19, 20, 1923.

TUESDAY, SEPTEMBER 18—9:00 A. M.

Call to Order by the President.....LOUIS FRANK, M. D., Louisville
Invocation.....J. G. CARPENTER, M. D., Stanford
Address of Welcome.....M. M. PHILLIPS, M. D., Crab Orchard
Response to Address of Welcome.....C. C. HOWARD, M. D., Glasgow
Installation of President.
Address of the President.....FRANK BOYD, M. D., Paducah

SCIENTIFIC SESSION

TUESDAY, SEPTEMBER 18—10:00 12:00 A. M.

1. Surgery of the Prostate.....OWSLEY GRANT, M. D., Louisville
2. Foci of Infection above the Collar Bone and Importance of their Early Recognition.....R. W. BLEDSOE, M. D., Covington
3. Cardiac Disease in Childhood.....E. F. HORINE, M. D., Louisville
4. Management of the Ruptured Appendix.....J. G. GAITHER, M. D., Hopkinsville

Special Order at 12:00

ORATION IN SURGERY

Surgery—Why, When and How.....E. M. HOWARD, M. D., Harlan

SCIENTIFIC SESSION

TUESDAY, SEPTEMBER 18—2:00 P. M.

1. Diagnosis and Treatment of Chronic Joint Infections.....O. R. MILLER, M. D., Louisville
2. Management of Placenta Praevia.....E. A. STEVENS, M. D., Mayfield
3. The Treatment of Puerperal Infection.....J. T. REDDICK, M. D., Paducah
4. Insulin in Diabetes.....VIRGIL SIMPSON, M. D., Louisville
5. Present Status of Gall Bladder Surgery.....A. H. BARKLEY, M. D., Lexington

TUESDAY, SEPTEMBER 18—8:00 P. M.

Public Address.....HUGH CABOT, M. D., Ann Arbor, Mich.

SCIENTIFIC SESSION

WEDNESDAY, SEPTEMBER 19—9:00 A. M.

1. Acute Infective Osteomyelitis.....P. H. STEWART, M. D., Paducah
2. Complication and Sequella of Typhoid Fever.....E. R. GOODLOE, M. D., Paducah
3. Some Diseases of the Eye which are of Interest to All Physicians.....T. L. BAILEY, M. D., Madisonville
4. Focal Infections from the View Point of the Internist.....R. H. COWLEY, M. D., Berea
5. Pyrexias of Obscure Origin in Childhood.....P. F. BARBOUR, M. D., Louisville

Special Order at 12:00

ORATION IN MEDICINE

The Rural Doctor.....W. L. TYLER, M. D., Cardsville

SCIENTIFIC SESSION

WEDNESDAY, SEPTEMBER 19—2:00 P. M.

1. Management of the Bott'e Fed Baby.....W. O. EATON, M. D., Ashland
2. Diagnosis and Surgical Treatment of Carcinoma of the Rectum.....GRANVILLE HANES, M. D., Louisville
3. Problem of the Bleeding Uterus.....IRVIN ABELL, M. D., Louisville
4. Acute Injuries of the Brain with Special Reference to Treatment.....G. A. HENDON, M. D., Louisville
5. Diagnosis of the Chronic Dyspeptic.....C. W. DOWDEN, M. D., Louisville

WEDNESDAY, SSEPTEMBER 19—8:00 P. M.

Public Address.....J. B. KENNEDY, M. D., Detroit, Mich.

SCIENTIFIC SESSION

THURSDAY, SEPTEMBER 20—9:00 A. M.

1. Electro-Coagulation versus Operation in Cancer of the Uterus.....A. D. WILLMOTH, M. D., Louisville
2. Management of Stone in the Urinary Tract.....C. L. WHEELER, M. D., Lexington
3. The Possibilities and Limitations of Radiology in Malignancy.....N. J. GOERGEN, M. D., Cincinnati
4. Recognition of Some of the Common Affections of the Endocrine Glands..W. F. BOGGESS, M. D., Louisville
5. Radiation of Benign Uterine Affections with Report of Two Hundred and Twelve Cases.....KEITH & KEITH, M. D., Louisville

SCIENTIFIC SESSION

THURSDAY, SEPTEMBER 20—2:00 P. M.

1. Blood Chemistry in Diagnosis and Prognosis.....J. D. ALLEN, M. D., Louisville
2. A Consideration of the So-called Primary Anemias.....L. K. BALDAUF, M. D., Louisville
3. The Venereal Problem..E. C. ROEMELE, M. D., Frankfort
4. Surgical Diseases of the Spleen.....C. A. VANCE, M. D., Lexington

PROGRAM OF THE EYE, EAR, NOSE AND THROAT SECTION KENTUCKY STATE MEDICAL ASSOCIATION

MONDAY SEPTEMBER 17—10:00 A. M.

Treatment of Acute and Sub-Acute Empyema of the Nasal Accessory Sinuses.....Dr. J. A. STUCKY, Lexington
Foci of Infection Above the Collar Bone and the Importance of Their Early Recognition.....Dr. R. W. BLEDSOE, Covington
An Unusual Tumor Within the Larynx—Report of Case.....Dr. W. B. MCCLURE, Lexington
Lung Abscess of Four Years Standing Following Aspiration of a Peanut Kernel Cured by Bronchoscopic Aspiration of Pus and Dilatation of Bronchiectatic Stricture.....Dr. C. E. PURCELL, Paducah
Some Complications Following Mastoidectomy.....Dr. T. LIGGETT, Bailey, Madisonville
Report of a Case of Tuberculous Mastoiditis Treated with the Actinic Rays.....Dr. GEORGE F. DOYLE, Winchester
Clinical Problems of Suppurative Otitis Media.....Dr. G. E. SHAMBAUGH, Chicago

OFFICIAL CALL.

The Seventy-Third Annual Meeting of the Kentucky State Medical Association to be held at Crab Orchard Springs, September 17, 18, 19 and 20, 1923

To the Officers and Members of the Component County Societies of the Kentucky State Medical Association.

The Seventy-Third Annual Meeting of the Kentucky State Medical Association will convene in the Auditorium of the Crab Orchard Springs Hotel, Crab Orchard, on Monday, Tuesday, Wednesday and Thursday, September 17, 18, 19 and 20, 1923.

THE HOUSE OF DELEGATES

The House of Delegates of the Kentucky State Medical Association will convene in the Crab Orchard Springs Hotel, at 2 p. m., on Monday, September 17, 1923.

FIRST GENERAL SESSION

The First General Session, which constitutes the opening exercises of the scientific functions of the Association will be held in the auditorium of the Crab Orchard Springs Hotel, at 9 a. m., Tuesday, September 18, 1923.

THE COUNCIL

The Council will convene at the Crab Orchard Springs Hotel, Monday, September 17, 1923, at 10:30 a. m.

THE REGISTRATION DEPARTMENT

The Registration Department will be opened in the Crab Orchard Springs Hotel from 10 a. m., to 6 p. m., on Monday, September 17, 1923; from 8 a. m., to 6 p. m., Tuesday and Wednesday, September 18 and 19, and from 8 a. m., to 12 m. on Thursday, September 20.

COUNCILOR DISTRICTS

FIRST DISTRICT

W. W. Richmond Clinton, Councilor

Ballard	Fulton	Lyon
Caldwell	Graves	McCracken
Calloway	Hickman	Marshall
Carlisle	Livingston	Trigg

SECOND DISTRICT

D. M. Griffith, Owensboro, Councilor

Breckenridge	Henderson	Ohio
Crittenden	Hopkins	Union
Daviess	McLean	Webster
Hancock	Muhlenburg	

THIRD DISTRICT

J. H. Blackburn, Bowling Green, Councilor

Allen	Cumberland	Metcalfe
Barren	Hart	Warren-Edmonson
Butler	Logan	Simpson
Christian	Monroe	Todd

FOURTH DISTRICT

C. Z. Aud, Cecilia, Councilor

Bullitt	Henry	Shelby
Grayson	Larue	Oldham
Hardin	Meade	Nelson

FIFTH DISTRICT

C. G. Hoffman, Louisville, Councilor

Anderson	Franklin	Owen
Boone	Gallatin	Spencer
Carroll	Jefferson	Trimble

SIXTH DISTRICT

R. C. McChord, Lebanon, Councilor

Adair	Marion	Taylor
Boyle	Mercer	Washington
Green		

SEVENTH DISTRICT

V. G. Kinnaird, Somerset, Councilor

Casey	Lincoln	Russell
Clinton	Pulaski	Wayne
Garrard	Rockcastle	McCreary

EIGHTH DISTRICT

J. E. Wells, Cynthiana, Councilor

Bourbon	Harrison	Pend'eton
Bracken	Jessamine	Robertson
Campbell-Kenton	Mason	Scott
Fleming	Nicholas	Woodford
Grant		

NINTH DISTRICT

J. W. Kincaid, Catlettsburg, Councilor

Boyd	Greenup	Magoffin
Carter	Johnson	Pike
Elliott	Lewis	Martin
Floyd	Lawrence	

TENTH DISTRICT

R. J. Estill, Lexington, Councilor

Bath	Lee	Owsley
Breathitt	Letcher	Perry
Clark	Madison	Powell
Estill	Menifee	Rowan
Fayette	Montgomery	Wolfe
Knott	Morgan	

ELEVENTH DISTRICT

J. S. Lock, Barbourville, Councilor

Bell	Jackson	Leslie
Clay	Knox	Whitley
Harlan	Laurel	

CONSTITUTION AND BY-LAWS OF THE KENTUCKY STATE MEDICAL ASSOCIATION ADOPTED AT PADUCAH IN 1902 AS AMENDED

CONSTITUTION

Article I.—Name of the Association

The purpose of the Association shall be to federate and bring into compact organization the entire medical profession of the State of Kentucky, and to unite with similar associations in other states to form the American Medical Association, with a view to the extension of medical knowledge, and to the advancement of medical science, to the elevation of the standard of medical education, and to the enactment and enforcement of just medical laws; to the promotion of friendly intercourse among physicians, and to the guarding and fostering of their material interest and to the enlightenment and direction of public opinion in regard to the great problems of state medicine, so that the profession shall become more capable and honorable within itself, and more useful to the public in the prevention and cure of disease, and in prolonging and adding comfort to life.

Article III.—Component Societies

Component Societies shall consist of those county medical societies which hold charters from this Association.

Article IV.—Composition of the Association.

Section 1. This Association shall consist of Members, Delegates and Guests.

Sec. 2.—Members. The members of this Association shall be the members of the component county medical societies.

Sec. 3.—Delegates. Delegates shall be those members who are elected in accordance with this Constitution and By-Laws to represent their respective component county societies in the House of Delegates of this Association.

Sec. 4.—Guests. Any distinguished physician not a resident of this State may become a guest during any Annual Session upon invitation of the Association or its Council, and shall be accorded the privileges of participating in all of the scientific work of that session.

Article V.—House of Delegates

The House of Delegates shall be the legislative and business body of the Association, and shall consist of (1) Delegate elected by the component county societies, and (2) *ex-officio*, the officers of the Association as defined in Article VIII, Section 1, of this Constitution.

ARTICLE VI.—SECTIONS AND DISTRICT SOCIETIES

The House of Delegates may provide for a division of the scientific work of the Association into appropriate Sections, and for the organization of such Councilor District Societies as will promote the best interest of the profession. such societies to be composed exclusively of members of component county societies.

ARTICLE VII.—SESSIONS AND MEETINGS

Section 1. The Association shall hold an Annual Session, during which there shall be held daily not less than two General Meetings, which shall be open to all registered members, delegates and guests.

Sec. 2. The time and place for holding each Annual Session shall be fixed by the House of Delegates.

ARTICLE VIII.—OFFICERS

Section 1. The officers of this Association shall be a President, three Vice-Presidents, a Secretary, a Treasurer, and eleven Councilors.

Sec. 2. The President and Vice-Presidents shall be elected for a term of one year. The Secretary, Treasurer and Councilors shall be elected for terms of five years each, the Councilors being divided into classes so that two shall be elected each year. All of these officers shall serve until their successors are elected and installed.

Sec. 3. The Officers of The Association shall be elected by the House of Delegates on the morning of the last day of the Annual Session, but no Delegate shall be eligible to any office named in the preceding section, except that of Councilor, and no person shall be elected to any such office who is not in attendance upon the Annual Session and who has not been a member of the Association for the past two years.

ARTICLE IX.—FUNDS AND EXPENSES

Funds for meeting the expenses of the Association shall be arranged for by the House of Delegates by an equal per capita assessment upon each county society to be fixed by the House of Delegates, by voluntary contribution, and from the profits of its publication. Funds may be appropriated by the House of Delegates to defray the expenses of the Annual Session for publication and for such other purposes as will promote the welfare of the Association and profession.

ARTICLE X.—REFERENDUM

The General Meeting of the Association may, by a two-thirds vote, order a general referendum upon any question pending before the House of Delegates, and the House of Delegates may, by a similar vote of its own members, or after a like vote of the General Meeting, submit any such question to the membership of the Association for a final vote; and if the persons voting shall comprise a majority of all the members, a majority of such vote shall determine the question and be binding upon the House of Delegates.

ARTICLE XI.—THE SEAL

The Association shall have a common Seal with power to break, change or renew the same at pleasure.

ARTICLE XII.—AMENDMENTS

The House of Delegates may amend any article of this Constitution by a two-thirds vote of the delegates registered at that Annual Session, provided that such amendment shall have been presented in open meeting at the previous Annual Session and that it shall have been sent officially to each component county society at least two months before the session at which final action is to be taken.

BY-LAWS

CHAPTER I.—MEMBERSHIP

Section 1.—All members of the Component County Societies shall be privileged to attend all meetings and take part in all the proceedings of the Annual Session, and shall be eligible to any office within the gift of the Association. PROVIDED, that no physician may become a member of any county society unless he signs and keeps inviolate the following pledge:

I hereby promise upon my honor as a gentleman that I will not so long as I am a member of the Kentucky State Medical Association practice division of fees in any form; neither by collecting fees from others referring patients to me nor by permitting them to collect my fees for me; nor will I make joint fees with physicians or surgeons referring patients to me for operation or consultation; neither will I in any way, directly or indirectly, compensate anyone referring patients to me nor will I utilize any man as an assistant as a subterfuge for this purpose.

Sec. 2. The name of a physician upon the properly certified roster of members, or list of delegates, of a chartered county society which has paid its annual assessment, shall be *prima face* evidence of his right to register at the annual session in the respective bodies of this Association.

Section 3. No person who is under sentence or suspension or expulsion from any component society of this Association or whose name has been dropped from its roll of members shall be entitled to any of the rights or benefits of this Association, nor shall he be permitted to take part in any of its proceedings, until such time as he has been relieved of such disability.

Sec. 4. Each member in attendance at the Annual Session shall enter his name on

the registration book, indicating the component society of which he is a member. When his right to membership has been verified by receiving a badge which shall be evidence of his reference to the roster of the society, he shall have right to all the privileges of membership at that session. No member or delegate shall take part in any of the proceedings of an annual session until he has complied with the provisions of this section.

Chapter II.—Annual and Special Sessions of the Association

Section 1. The Association shall hold an annual session, meeting every third year in the city of Louisville, and the other two years at some point in the State fixed at the preceding annual session.

Chapter III.—General Meeting

Section 1. The General Meeting shall include all registered members, delegates and guests, who shall have equal rights to participate in the proceedings and discussions; and except guests, to vote on pending questions. Each General Meeting shall be presided over by the President, or in his absence or disability or upon his request, by one of the Vice-Presidents. Before it, at such time and place as may have been arranged, shall be delivered the annual address of the President, and the annual orations and the entire time of the Sessions as far as may be shall be devoted to papers and discussions relating to scientific medicine.

Sec. 2. The general Meeting shall have authority to create committees or commissions for scientific investigations of special interest and importance to the profession and public, and to receive and dispose of reports of the same; but any expense in connection therewith must first be approved by the House of Delegates.

Sec. 3. Except by special vote, the order of exercises, papers and discussions as set forth in the official program shall be followed from day to day until it has been completed.

Sec. 4. No address or paper before the Association, except those of the President and Orators, shall occupy more than twenty minutes in its delivery; and no member shall speak longer than five minutes, nor more than once on any subject.

Sec. 5. All papers read before the Association shall be its property. Each paper shall be deposited with the Secretary when read, and if this is not done, it shall not be published.

Chapter IV.—House of Delegates

Section 1. The House of Delegates shall meet annually at the time and place of the Annual Session of the Association and shall so fix its hours of meeting as not to conflict with the first General Meeting of the Association, or with the meeting held for the address of the President and the annual orations, and so as to give delegates an opportunity to attend the other scientific proceedings and discussions so far as is consistent with the duties. But if the business interests of the Association and profession require, it may meet in advance or remain in session after the final adjournment of the General Meeting.

Sec. 2. Each component county society shall be entitled to send to the House of Delegates each year one delegate for every 25 members, and one for each major fraction thereof, but each county society holding a charter from this Association, which has made its annual report and paid its assessment as provided in this Constitution and By-Laws, shall be entitled to one delegate. In case the regularly elected delegate and alternate is unable to attend the annual meeting of the Association, the President of the county society may in writing appoint an alternate, who shall have the rights and privileges of a delegate.

Sec. 3. A majority of the registered delegates shall constitute a quorum and all of the meetings of the House of Delegates shall be open to members of the Association.

Sec. 4. It shall, through its officers, Advisory Council, and otherwise, give diligent attention to and foster the scientific work and spirit of the Association, and shall constantly study and strive to make each annual session a stepping stone to further ones of higher interest.

Sec. 5. It shall consider and advise as to the material interest of the profession, and of the public in those important matters wherein it is dependent upon the profession, and shall use its influence to secure and enforce all proper medical and public-health legislation, and to diffuse popular information in relation thereto.

Sec. 6. It shall make careful inquiry into the condition of the profession of each county in the State, and shall have authority to adopt such methods as may be deemed most efficient for building up and increasing the interest in such county societies as already exist and for organizing the profession in counties where societies do not exist. It shall especially and systematically endeavor to promote friendly intercourse between physicians of the same locality and shall continue these efforts until every physician in every county of the State who can be made reputable has been brought under medical society influence.

Sec. 7. It shall encourage post-graduate work in medical centers as well as home study and research and shall endeavor to have the results of the same utilized and intelligently

discussed in the county societies. With these ends in view, five years after the adoption of the By-Laws no voluntary paper shall be placed upon the annual program or be heard in the Association which has not first been heard in the county society of which the author is a member.

Sec. 8. It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By-Laws of that body in such manner that not more than one-half of the delegates shall be elected in any one year.

Sec. 9. It shall upon application provide and issue charters to county societies organized to conform to the spirit of the Constitution and By-Laws.

Sec. 10. In sparsely settled sections it shall have the authority to organize the physicians of two or more counties to be designated by hyphenating the names of two or more counties so as to distinguish them from district and other classes of societies and these societies, when organized and chartered shall be entitled to all the privileges and representation provided herein for county societies, until such counties may be organized separately.

Sec. 11. It may divide the counties of the State into Councilor Districts, and, when the best interests of the Association and profession will be promoted thereby, organize in each district a medical society, to meet midway between the Annual Sessions of the Association, and members of the chartered county societies and none other shall be members in such district societies. When so organized from the presidents of such district societies shall be chosen the Vice-Presidents of this Association and the Presidents of the county societies of the district shall be the Vice-Presidents of such district societies.

Sec. 12. It shall have authority to appoint committees for special purposes from among members of the Association who are not members of the House of Delegates, and such committee may report to the House of Delegates in person, and may participate in the debate therein.

Sec. 13. It shall approve all memorials and resolutions issued in the name of the Association before the same shall become effective.

Sec. 14. It shall present a summary of its proceedings to the last general meeting of each annual session, and shall publish the same in the JOURNAL.

CHAPTER V.—ELECTION OF OFFICERS

Section 1. All elections shall be by secret ballot ,and a majority of the votes cast shall be necessary to elect, provided, however, that when there are more than two nominees, the nominee receiving the least number of votes on the first ballot shall be dropped and the balloting continue until an election occurs in like manner.

Sec. 2. Any member known to have directly or indirectly solicited votes for or sought any office within the gift of this Association shall be ineligible for any office for two years.

Sec. 3. The election of officers shall be the first order of business of the House of Delegates after the reading of the minutes on the morning of the last day of the General session.

Sec. 4. Nominations for President shall be called for by counties.

CHAPTER VI.—DUTIES OF OFFICERS

Section 1. The President shall preside at all meetings of the Association and of the House of Delegates; shall appoint all committees not otherwise provided for; shall deliver annual address at such time as may be arranged; shall give a deciding vote in case of a tie, and shall perform such other duties as custom and parliamentary usage may require. He shall be the real head of the profession of the State during his term of office, and so far as practicable, shall visit by appointment, the various sections of the State and assist the Councilors in building up the county societies and in making their work more practical and useful.

Sec. 2. The Vice-Presidents shall assist the President in the discharge of his duties In the event of his death, resignation or removal the Council shall elect one of the Vice-Presidents to succeed him.

Sec. 3. The Treasurer shall give bond for the trust imposed in him whenever the House of Delegates shall deem it requisite. He shall demand and receive all funds due the Association, together with the bequests and donations. He shall, under the direction of the House of Delegates, sell or lease any estate belonging to the Association and execute the necessary papers; and shall, in general, subject to such direction, have the care and management of the fiscal affairs of the Association. He shall pay money out of the Treasury, only on written order of the President, countersigned by the Secretary; he shall subject his accounts to such examination as the House of Delegates may order, and he shall annually render an account of his doings and of the state of funds in his hands.

Sec. 4. The Secretary, acting with the Committee on Scientific Work, shall prepare and issue the program for and attend all meetings of the Association and of the House of Delegates and he shall keep minutes of their respective proceedings in separate record books. He shall charge upon his books the assessments against each component county

society at the end of the fiscal year; he shall collect and make proper credits for the same, and perform such other duties as may be assigned to him. He shall be custodian of all record books and papers belonging to the Association, except such as properly belonging to the Treasurer, and shall keep account of and promptly turn over to the Treasurer all funds of the Association which come into his hands. He shall provide for the registration of the members and delegates at the Annual Sessions. He shall keep a card index register of all the legal practitioners of the State by counties, noting on each his status in relation to his county society and upon request shall transmit a copy of this list to the American Medical Association for publication. In so far as it is in his power he shall use the printed matter, correspondence and influence of his office to aid the Councilors in the organization and improvement of the county societies and in the extension of the power and usefulness of this Association. He shall conduct the official correspondence, notifying members of meeting, officers of their election, and committees of their appointment and duties. He shall act as secretary of the Committee on Scientific Work. He shall be editor of the KENTUCKY MEDICAL JOURNAL He shall employ such assistants as may be ordered by the Council or the House of Delegates. He shall annually make a report of his doings to the House of Delegates.

In order that the Secretary may be enabled to give that amount of time to his duties which will permit of his becoming proficient it is desirable that he shall receive some compensation. The amount of his salary shall be fixed by the House of Delegates.

CHAPTER VII.—COUNCIL

Section 1. The Council shall hold daily meetings during the annual session of the Association and at such other times as necessity may require, subject to the call of the Chairman or on petition of three Councilors. It shall meet on the last day of the annual session of the Association for re-organization and for the outlining of the work for the ensuing year. At this meeting it shall elect a Chairman and Secretary and it shall keep a permanent record of its proceedings. It shall through its Chairman, make an annual report to the House of Delegates at such time as may be provided, which report shall include an audit of the account of the Secretary and Treasurer and other agents of this Association and shall also specify the character and cost of all the publications of the Association during the year, and the amount of all other property belonging to the Association, or under its control, with such suggestions as it may deem necessary. In the event of a vacancy in any office the Council may fill the same until the next annual election.

Sec. 2. Each Councilor shall be organizer, peacemaker and censor for his district. He shall visit each county in his district at least once a year for the purpose of organizing component societies where none exist, for inquiring into the condition of the profession and for improving and increasing the zeal of the county societies and their members. He shall make an annual report of his doings, and for the condition of the profession of each county in his district to each annual session of the House of Delegates. The necessary traveling expenses incurred by such Councilor in the line of the duties herein imposed may be allowed by the House of Delegates upon a proper itemized statement, but this shall not be construed to include his expenses in attending the annual session of the Association.

Sec. 3. Collectively the Council shall be the board of Censors of the Association. It shall consider all questions involving the right and standing of members, whether in relation to other members, to the component societies, or to this Association. All questions of an ethical nature brought before the House of Delegates of the General Meeting shall be referred to the Council without discussion. It shall hear and decide all questions of discipline effecting the conduct of members or of a county society upon which appeal is taken from the decision of an individual Councilor. Its decision in all such cases shall be final.

Sec. 4. The Council shall have the right to communicate the views of the profession and of the Association in regard to health, sanitation and other important matters to the public and the lay press. Such communications shall be officially signed by the chairman and secretary of the Council, as such.

Sec. 5. The Council shall provide for and superintend the publication and distribution of all proceedings, transactions and memories of the Association and shall have authority to appoint such assistants to the editor as it deems necessary. It shall manage and conduct the KENTUCKY MEDICAL JOURNAL, which is the organ of the Association, and all money received by the JOURNAL, the Council or any officer of the Association, shall be paid to the Treasurer of the Association on the first of each month.

Sec. 6. All reports on scientific subjects and all scientific discussions and papers read before the Association shall be referred to the KENTUCKY MEDICAL JOURNAL for publication. The editor, with the consent of the Councilor for the District in which he resides may curtail or abstract papers or discussions,

and the Council may return any paper to its author which it may not consider suitable for publication.

Sec. 7. All commercial exhibits during the annual session shall be within the control and direction of the Council.

Chapter VIII.—Committees

Section 1. The standing committees shall be as follows:

A Committee on Scientific Work.

A Committee on Publication Policy and Legislation.

A Committee on Medical Education.

A Medico-Legal Committee.

A Committee on Arrangements, and such other committees as may be necessary. Such committees shall be elected by the House of Delegates, unless otherwise provided.

Sec. 2. The Committee on Scientific Work shall consist of three members of which the President-elect shall be a member and Chairman, and the Secretary shall be a member and Secretary, and shall determine the character and scope of the scientific proceedings of the Association, subject to the provisions or the instructions of the House of Delegates or of the Association, or to the provisions of the Constitution and By-Laws. Thirty days previous to each annual session it shall prepare and issue a program announcing the order in which papers, discussions and other business shall be presented, which shall be adhered to by the Association as nearly as practicable.

Sec. 3. The Committee on Public Policy and Legislation shall consist of three members and the President and Secretary. Under the direction of the House of Delegates it shall represent the Association in securing and enforcing legislation in the interest of the public health and scientific medicine. It shall keep in touch with the profession and public opinion, shall endeavor to shape legislation so as to secure the best results for the whole people, and shall utilize every organized influence in local, state and national affairs and elections. Its work shall be done with dignity becoming a great profession and with that wisdom which will make effective its work and influence. It shall have authority to be heard before the entire Association upon questions of great concern at such times as may be arranged during the annual session.

Sec. 4. The Committee on Arrangements shall consist of the component society in the territory in which the annual session is to be held. It shall, by committees of its own selection, provide suitable accommodations for the meetings-places of the Association and of the House of Delegates and of their respective committee, and shall have general charge of all arrangements. Its Chairman shall report an outline of the arrangements to the Secretary for publication in the program, and shall make additional announcements during the session as occasion may require.

Sec. 5. The Medico-Legal Committee shall consist of three members, one of whom, the Chairman, shall be elected by the Council for five years, and the Secretary and Treasurer shall be the other two members *ex officio*. This committee shall select and fix the compensation for an attorney, who shall act as General Counsel, and if required, additional local counsel. The Association through this Committee shall defend its members who are in good standing against unjust suits for malpractice.

Chapter IX.—Assessments and Expenditures

Section 1. The assessment of four dollars per capita on the membership of the component societies is hereby made the annual dues of this Association. The Secretary of each county society shall forward its assessment together with its roster of all officers and members, lists of delegates, and list of non-official physicians of the county to the Secretary of this Association on the first day of January in each year.

Sec. 2. Any county society which fails to pay its assessment, or make the report required, on or before the first day of April in each year, shall be held as suspended, and none of its members, or delegates shall be permitted to participate in any of the business or proceedings of the Association or of the House of Delegates until such requirements have been met.

Sec. 3. All motions or resolutions appropriating money, shall specify a definite amount, or so much thereof as may be necessary for the purpose indicated, and must be approved by the Council and House of Delegates.

Chapter X.—Rules of Conduct

The principles set forth in the Principles of Ethics of the American Medical Association shall govern the conduct of members in their relations to each other and to the public.

Chapter XI.—Rules of Order

The deliberations of this Association shall be governed by parliamentary usage as contained in Roberts' Rules of Order, unless otherwise determined by a vote of its respective bodies.

Chapter XII.—County Societies

Section 1. All county societies now in affiliation with the State Association or those that may hereafter be organized in this State, which have adopted principles of organization not in conflict with this Constitution and By-Laws, shall, upon application to the House of

Delegates, receive a charter from and become a component part of this Association.

Sec. 2. As rapidly as can be done after the adoption of this Constitution and By-Laws, a medical society shall be organized in every county in the State in which no component society exists, and charters shall be issued thereto.

Sec. 3. Charters shall be issued only upon approval of the House of Delegates and shall be signed by the President and Secretary of this Association. The House of Delegates shall have authority to revoke the charter of any component county society whose actions are in conflict with the letter or spirit of this Constitution and By-Laws.

Sec. 4. Only one component medical society shall be chartered in any county. Where more than one county society exists, friendly overtures and concession shall be made with the aid of the Councilor for the District if necessary, and all of the members brought into one organization. In case of failure to unite, an appeal may be made to the Council, which shall decide what action shall be taken.

Sec. 5. Each county society shall judge of the qualifications of its own members, but as such societies are the only portals to this Association, every reputable and legally registered physician who is practicing, or who will agree to practice, non-sectarian medicine shall be entitled to membership. Before a charter is issued to any county society, full and ample notice and opportunity shall be given to every physician in the county to become a member.

Sec. 6. Any physician who may feel aggrieved by the action of the society of his county in refusing him membership, or in suspending or expelling him, shall have the right to appeal to the Council, which, upon a majority vote, may permit him to become a member of an adjacent county society.

Sec. 7. In hearing appeals the Council may admit oral or written evidence as in its judgment will best and most fairly present the facts, but in case of every appeal, both as a Board and as individual councilors in district and county work, efforts at conciliation and compromise shall precede all such hearings.

Sec. 8. When a member in good standing in a component society moves to another county in the State, his name, upon request shall be transferred without cost to the roster of the county society into whose jurisdiction he moves.

Sec. 9. A physician living in or near a county line may hold membership in that county most convenient for him to attend, on permission of the society in whose jurisdiction he resides.

Sec. 10. Each county society shall have general direction of the affairs of the profession in the county, and its influence shall be constantly exerted for bettering the scientific, moral and material conditions of every physician in the county; and systematic efforts shall be made by each member, and by the society as a whole, to increase the membership until it embraces every qualified physician in the county.

Sec. 11. Frequent meetings shall be encouraged, and the most attractive programs arranged that are possible. The younger members shall be especially encouraged to do post-graduate and original research work, and to give the society the first benefit of such labors. Official position and other preferenees shall be unstintingly given to such members.

Sec. 12. At the time for the annual election of officers each county society shall elect a delegate or delegates to represent it in the House of Delegates of this Association in the proportion of one delegate to each twenty-five members or major fraction thereof, and the secretary of the society shall send a list of such delegates to the Secretary of this Association at least sixty days before the Annual session.

Sec. 13. The Secretary of each county society shall keep a roster of its members, and a list of the non-affiliated registered physicians of the county, in which shall be shown the full name, address, college and date of graduation, date of license to practice in this State and such other information as may be deemed necessary. He shall furnish an official report containing such information, upon blanks supplies him for the purpose, to the Secretary of this Association, on the first day of January of each year, or as soon thereafter as possible, and at the same time that the dues accruing from the annual assessment are sent in. In keeping such roster the Secretary shall note any changes in the personnel of the profession by death, or by removal to or from the county, and in making his annual report he shall be certain to account for every physician who has lived in the county during the year.

Sec. 14. The Secretary of each county society shall report to the KENTUCKY MEDICAL JOURNAL full minutes of each meeting and forward to it all scientific papers and discussions which the Society shall consider worthy of publication.

CHAPTER XIII.—AMENDMENTS

These By-Laws may be amended by any annual session by a two-thirds vote of all the delegates present at that session, after the amendment has been laid on the table for one day.



SPRING LAKE, BATHING IS A FAVORITE PASTIME



POLO TEAM, HORSES FROM OUR STABLES

REPORT OF THE COUNCIL

To the House of Delegates:

The membership of the State and County societies for this year remains about the same as for each of the past three years. We have called the attention of the House from year to year to the fact that about 400 of our physicians, who are in active practice and who are actively interested in our work, are in and out of the State Association from year to year and, this way, fail to keep in touch with movements for the betterment of the profession and the public health, and we strictly urge the House to take steps at this session for closing up the ranks and thus secure the constant allegiance of these important men particularly at this time when the very life of the profession itself is threatened by both open attacks from cults and others from without and by insidious attempts to destroy its influence by a very small number of its members from within. There has never been before a time in the history of Kentucky when progressive medicine needed so to be on its guard, in order to prevent the control of the public health machinery of the State by politicians and the overthrow of our splendid practice act by those who desire to profit by misleading and mistreating the sick and unfortunate. The plan of attack this year will be along several lines. A suggestion is being made that all of the boards of examiners, including not only those which are now under the control of the State Board of Health but those having charge of dentistry, pharmacy, nursing, embalming, plumbers, expert accountants and all the other learned professions and trades, should be put under the control of a State Commissioner of Registration, who would be a layman not knowing anything about any of them, and all of the progress which has been made for it benefit of the people in the various professions and trades for the past twenty years would be thrown away as has already been done in Illinois and a number of other states which are trying this plan. Another suggestion, which has been frequently pushed heretofore, and which we have so far been able to defeat, is the creation of separate boards of examiners for each school or cult in the practice of the healing art. Such a plan has been tried in a number of states, notably in California, and it has flooded that State with cults and empirics who do little else than harm. Another suggestion is that the State Board of Health should be abolished and a State Health Commissioner should be appointed by the Governor. This is the plan now used in a number of states and means the change of public health administration with the election of each new Governor, and prevents the continuity of plan and operation which has not only made our State Board of Health, and that of other states with similar plans, the most effective, but which has destroyed and put under the control of politicians great organizations built up over many years by the great sanitarians of other states. The plan by which the State Board of Health is now selected in Kentucky, upon the nomination of the profession's societies, safeguards the State from political control and is essential to public health administration. In many states where political control of the health department has been provided by legislation there have been sharp divisions between those engaged in the practice of preventive medicine, which has lead to nothing but harm to the public health and to the profession.

Others are urging the repeal of all, or part, of the medical practice act, unmindful of the fact that Kentucky is the only State in the Union which is free from advertising and itinerant doctors and that both its urban and rural districts are better provided with physicians than probably any other state in the Union considering the conditions of our roads and schools.

For these, and many other reasons, which will occur to the members of the House, it is essential that every physician now practicing in Kentucky keeps himself informed and be ready to help organize public opinion so as to prevent discordant changes in our law.

Charts which will be exhibited at this meeting show the progress which is being made in public health and in the practice of medicine in Kentucky so graphically that "he who runs may read." In ten years the death rate from tuberculosis has been cut in half. That from typhoid fever, while still far too high, has been reduced 60 per cent and in all the other preventible diseases there has been corresponding reductions. The death rate for the past two years has been the lowest in the history of the State. Before 1888 anyone who desired could practice any branch of the healing art anywhere. The State was overrun with traveling quacks and empiries as well as the stationary variety. It is important to remind our newspapers and legislators that before 1888 the death rate was more than double its present rate. This is the best answer to those who would reduce the standard of requirements for those practicing the healing art. It is important to remember, also, that more hospitals are being built. More effective work is being done by the profession than ever before and, if the counties, which are complaining about a shortage of physicians, will make provision for their compensation and at the same time will build such roads that their people are accessible and schools

where physicians' children may be educated, there will be little difficulty in their securing first class medical service.

The Medical Department of the University of Louisville has enlarged its classes and they are teaching every man available. The Council urges that the House of Delegates consider the feasibility of the introduction of an act in the next General Assembly that would permit county or smaller taxing districts to create scholarships for the education of their young men and women in medicine, under contract that they would return and practice there for a term of years. Such scholarships would provide the additional income without which additional students cannot be admitted to the University. The University of Louisville has been reorganized and stands among the best medical institutions of the United States, and if the State desires more physicians it can easily secure them by providing the money which will educate more young men and women in medicine.

During the past year, many county societies have continued to hold diagnostic clinics along various lines that were mentioned in our report last year. This has been particularly true in tuberculosis and no other factor has been of greater assistance in reducing the sick and death rate from this serious disease than these clinics. During the past year, they have been held in twenty-two counties and the county societies have devoted sixty days to the clinics. More than 10,000 persons have attended these clinics and heard illustrated addresses and seen demonstrations in public health. There have been 1750 individuals carefully examined and a few more than 300 found to have tuberculosis. From these clinics health literature has been placed in more than 2500 homes and it is apparent that the 10,000 persons attending them know more about public health and scientific medicine than they could have known otherwise.

Similar clinics have been held for crippled children and adults and it is apparent from the study that has been made of this question that there are more than 12,000 cripples in the State, most of whom have received no treatment since the original disease or injury, which caused their condition. With the support of the Shriners, Rotary Clubs and other organizations of the State, it should be possible to arrange for the prompt treatment of these cases so that most of them will not be permanent cripples and so that all of them can be made self-supporting.

Similar clinics in regard to trachoma and other diseased conditions of the eye and of the nose and throat have been held.

Under the operation of the Sheppard-Towner law, numerous clinics for pregnant women and young babies have been organized in 84 counties. These have all been held with the co-operation and under the management of the county medical societies. For the first time in the history of the State, as a result of this systematic campaign large numbers of pregnant women are under constant medical supervision and healthy babies are being constantly brought to physicians' offices so that any tendency toward disease may be recognized and corrected. An organized campaign for the physical and health examination of the well has been undertaken and many incipient cases of disease are being recognized by such examinations while they are still curable.

These activities of the profession are of tremendous importance to the people of the State and our members should constantly be bringing them to the attention of the public so they will appreciate the fact that the medical profession is interested in the public welfare and is bringing to bear all the discoveries of modern science on our health problems with a view to keeping people efficient during the normal length of life.

The Council is impressed with the necessity for the extension of preventive medicine. In our rural districts every citizen who has not had typhoid fever should be inoculated against this disease every two or three years. In a few counties and in many localities in most counties this is being done, but an increased death rate from typhoid fever in 1921 and again this year, indicates that it is not being done adequately. The Schick Test and the toxin-antitoxin immunization against diphtheria are as complete and effective as any method known to modern medicine, and yet, it is distressing to note from our vital statistics returns that the death rate from diphtheria has increased over each of the past two years. It is urged that County Societies hold public meetings in various sections of the county where the public may be educated in regard to these necessary measures and that clinics be held by the County Societies for administration of the prophylatic vaccines for the indigent. If this were done actively in every county it would reduce our death rate to that of other states in the Union that do these things.

There are three great taxes in Kentucky, Bad Roads, Poor Schools and Ill Health, and of these the latter is far the most expensive. Neither of them can be wholly improved until a joint attack is made upon all three. Good roads and good schools are necessary to good health, but neither of these are of use unless we have a healthy, virile population to utilize them.

Four years ago the General Assembly placed in the hands of the State Board of Health

the examining and licensing of all cults and sects treating sick people in any way. The wise administration of this law was inaugurated by one of the greatest medical statesmen and jurists who has ever served the profession and the public, the late Dr. Joseph N. McCormack, and it is the privilege as well as the duty of the profession to see that this statute is preserved and that it is enforced so that it will accomplish its purpose of just and fair treatment for all who desire to treat sick people, and that it shall preserve the public health by keeping out of practice those who are incompetent. It is gratifying to know that the health and lives of our people are being protected from the hordes of incompetent and untrained men who are swarming in states whose legislatures are failing to realize the danger to their people. If a man or a woman has had a basic education that enables him or her to make accurate diagnosis so that they know not to do things, they can, most of the time be safely trusted with what they have been taught to do. Complaints are frequently made as to failure to enforce the medical and other laws. These failures are matters for which the legal profession in each county is responsible. Where the County and Circuit Judges, and County and Commonwealth Attorneys are competent, there is never any question about law enforcement. Where they are ignorant or can be influenced by financial and other interests than the public welfare little can be expected. This Association and the State Board of Health have joined in the employment of the well known firm of Beckham, Hamilton and Beckham as their attorneys and they are ready to assist in the enforcement of the law whenever the physicians secure the necessary evidence. It is obviously impossible for any one outside of the locality infested with law violators to work up evidence and carry on the case through the courts, but we are ready to help in the conduct of the case in court, when the evidence is ready to be presented.

The Council invites the careful attention of the membership to the financial report which is presented in the Annual Number of the JOURNAL. It will be noticed that the cash balance on hand September 1st was $1,7769.63, and $3,000 invested in Liberty bonds, which is the available reserve fund of the Association.

The financial report made by the Secretary and Treasurer is in very great detail and it is important that the delegates consider these expenditures with the view to disapproving any which the House feels should not be continued and of providing for any others that need to be established. It will be noted that the editor of the JOURNAL has continued the policy which was inaugurated 18 years ago, and which was approved again by the House of Delegates last year, of publishing all articles sent in by the several component county societies. This makes our JOURNAL really representative of the profession of the State and the Council heartily approves the continuation of this practice. It should be realized by the profession, however, that it can only be continued with the active financial support of our advertisers and we desire to urge the House of Delegates to take steps to bring the importance of such support before the various county societies. Our advertisers pay for the publication of the JOURNAL. This Association guarantees the financial integrity of the advertising columns of our JOURNAL. For these reasons, we feel that we have a right to ask our members to patronize the advertisers, or at least to give them an opportunity to secure their patronage, other things being equal.

These same arguments apply to the exhibits at the Annual meetings. These exhibitors largely pay the expense of the Annual meetings. They are carefully selected from amongst a much larger number of applicants by a special committee of the Council and their exhibits bring before us the various improvements in medical and surgical technique in a way that it would be impossible without these exhibitors. The Council desires to urge those in attendance at the Annual session to carefully study the exhibits and patronize the exhibitors.

It is unnecessary for the members of this House to be reminded that they have absolute control of all matters of public policy which affect the practice of medicine and public health in Kentucky and at this Annual session enough time will be devoted to the discussion of the various problems confronting the profession so that they may instruct their officers as to exactly what they desire shall be done.

Respectfully submitted,
R. C. MCCHORD, M. D.,
Chairman.

Heredity in Alcaptonuria.—The father and mother in the instances cited by Cuthbert were first cousins, the father's mother and the mother's mother being sisters. The parents know of no case of alcaptonuria among their forbears. They have had six children, all of whom are alive and in good health. There have been no miscarriages or stillbirths. None of the children exhibit any structural malformation. Neither parent is alcaptonuric; of their six children, three (two boys and one girl) exhibit the anomaly. The blood Wassermann in all these cases was negative.



GROVE OR CHALYBEATE SPRINGS



SPRING-FED FIVE-ACRE LAKE—INSET SWIMMING POOL

AUDITOR'S REPORT

To the Council of the Kentucky State Medical Association:

GENTLEMEN:

At your request, I have this date made a complete audit of the books and accounts of your Secretary, Dr. A. T. McCormack, and your Treasurer, Dr. W. B. McClure, for the period of September 1st, 1922, to September 1st, 1923—I find the records well kept and in perfect balance, having checked every item in detail. The exhibits herewith submitted set forth in detail and aggregate every financial transaction for the period covered:

Reconciliation of the Treasurer's account for period September, 1922 to September, 1923, viz:

Balance on hand at last report	$ 3,895.04	
Less vouchers outstanding	872.05	
Balance agreeing with Secretary		$ 3,022.99
Amount received from Secretary	15,201.07	
Amount in hands of Secretary	1,042.49	16,243.56
Total		19,266.55
DISBURSEMENTS		
Vouchers No. 1 to 137		17,496.92
Balance		$ 1,769.63
Balance in Second National Bank, Lexington, Ky.	2,909.49	
Balance in National Bank of Ky., Louisville, Ky.	1,042.49	3,951.98

Vouchers outstanding, viz:

No. 84, June 6, 1921, A. P. Hunt, Fullerton	$ 1.00
No. 111, Jan. 3, 1922, Dr. V. A. Stilley	6.50
No. 116, June 30, 1923, Dr. A. T. McCormack	150.00
No. 120, June 30, 1923, State Board of Health	200.00
No. 125, July 31, 1923, Dr. A. T. McCormack	150.00
No. 126, July 31, 1923, Dr. L. H. South	100.00
No. 127, July 31, 1923, Elva Grant	75.00
No. 128, July 31, 1923, State Board of Health	200.00
No. 129, July 31, 1923, Mrs. E. B. Kreiger	87.50
No. 130, July 31, 1923, The Electric Blue Print & Supply Co.	25.00
No. 131, July 31, 1923, Koehler Stamp & Stencil Co.	8.50
No. 132, July 31, 1923, The Times Journal Publishing Co.	508.85
No. 133, August 31, 1923 Dr. A. T. McCormack	150.00
No. 134, August 31, 1923, Dr. L. H. South	100.00
No. 135, August 31, 1923, Elva Grant	75.00
No. 136, August 31, 1923, State Board of Health	200.00
No. 137, August 31, 1923, Fred Forcht	150.00
Total vouchers outstanding	$ 2,182.35
Balance agreeing with Secretary	$ 1,769,63

Vouchers No. 116-120-125 to 137 are in the hands of the Secretary to be delivered.

STATEMENT OF ASSETS

Balance in Second National Bank, Lexington, Ky., to the credit of W. B. McClure, Treasurer	2,909.49	
Balance in National Bank of Ky., to the credit of the Kentucky Medical Journal	810.49	
Balance in National Bank of Ky., to the credit of the Kentucky State Medical Association	232.00	
Total cash	3,951.98	
Less Vouchers outstanding	2,182.35	
Net cash balance		$ 1,769.63
Liberty Bonds in hands of Treasurer, face value		3,000.00
Office Furniture, etc., (see Exhibit C)		847.39
Total		$ 5,617.02

Respectfully submitted,

B. P. EUBANK, *Auditor.*

August 2, 1923.

EXHIBIT "A"

RECEIPTS

Dues from County Societies	$ 9,594.00	
Income of Journal (exclusive of investments, etc.)	6,522.06	$16,116.06
Interest on Investments, viz:		
Interest on Liberty Bond No. 2	42.50	
Interest on Liberty Bond No. 1	85.00	127.50
Total Receipts		$16,243.56
Balance on hand, September 1, 1922		3,022.99
Total		$19,266.55

DISBURSEMENTS

STATE MEDICAL ASSOCIATION:		
Secretary's Salary	$ 1,800.00	
Secretary's Stenographer	900.00	
Secretary's Sundries	129.01	
Secretary's stamps and envelopes	525.40	
Treasurer's office expense and bond	12.50	
Officers, Councilors and Committee expenses	273.05	
Practice-Act, Medical Enforcement	2,400.00	
Attorney's Fees, Medico-Legal Committee	2,189.62	
Costs and Expenses	1,112.25	
Association Sundries	406.15	
Expenses of Paducah Meeting	1,097.04	
Expenses, Crab Orchard Meeting	25.00	
Total		$10,870.02
KENTUCKY MEDICAL JOURNAL:		
Business Manager's Salary	$ 1,200.00	
Business Manager's Sundries	93.42	
Printing Journal	3,432.18	
Cost of paper	296.85	
Postage on Journal	160.00	
Journal Advertising Commissions	283.75	
Journal Sundries	1,160.70	
Total		$ 6,626.90
Grand Total		$17,496.92
Balance on hand this date		1,769.63
Total		$19,266.55

EXHIBIT "B"

Detailed list of receipts from County Societies from September, 1922 to September 1, 1923, compared with incomes of same period last year.

	1922	1923
Adair	$ 32.00	$ 45.00
Allen	52.00	55.00
Anderson	40.00	50.00
Ballard	64.00	65.00
Barren	76.00	99.00
Bath	24.00	45.00
Bell	144.00	180.00
Boone	12.00	15.00
Bourbon	72.00	103.00
Boyd	176.00	215.00
Boyle	40.00	59.00
Bracken	20.00	35.00
Breathitt	32.00	49.00
Breckenridge	76.00	80.00
Bullitt	36.00	44.00

Butler	20.00	35.00
Caldwell	56.00	55.00
Calloway	80.00	85.00
Campbell-Kenton	440.00	569.00
Carlisle	40.00	50.00
Carroll	36.00	35.00
Carter	50.00	85.00
Casey	19.00	20.00
Christian	164.00	169.00
Clark	68.00	100.00
Clay	36.00	30.00
Clinton	16.00	15.00
Crittenden	32.00	40.00
Cumberland	36.00	35.00
Daviess	216.00	258.00
Elliott		4.00
Estill	28.00	35.00
Fayette	320.00	429.00
Fleming	52.00	75.00
Floyd	23.00	43.00
Franklin	80.00	94.00
Gallatin	20.00	25.00
Fulton	76.00	75.00
Grant	60.00	30.00
Garrard	36.00	40.00
Graves	120.00	153.00
Grayson	60.00	60.00
Green	24.00	20.00
Greenup	24.00	30.00
Hancock	4.00	5.00
Hardin	108.00	110.00
Harlan	180.00	160.00
Hart	36.00	40.00
Harrison	84.00	90.00
Henderson	76.00	113.00
Henry	52.00	60.00
Hickman	48.00	65.00
Hopkins	111.50	141.00
Jackson	12.00	20.00
Jefferson	1,452.00	1,654.00
Jessamine	40.00	55.00
Johnson	51.00	40.00
Knott	4.00	5.00
Knox	68.00	80.00
Larue	32.00	25.00
Laurel	44.00	40.00
Lawrence	36.00	44.00
Lee	12.00	15.00
Leslie	8.00	10.00
Letcher	60.00	40.00
Lewis	24.00	30.00
Lincoln	64.00	80.00
Livingston	36.00	29.00
Logan	88.00	118.00
Lyon	24.00	25.00
McCracken	172.00	225.00
McCreary	24.00	30.00
McLean	21.00	20.00
Madison	108.00	125.00
Magoffin		
Marion	64.00	79.00
Marshall	60.00	69.00
Martin		
Mason	76.00	80.00
Meade	24.00	29.00
Menifee		
Mercer	72.00	99.00
Metcalfe	32.00	40.00
Monroe	28.00	35.00
Montgomery	56.00	70.00
Morgan	4.00	14.00
Muhlenberg	104.00	130.00
Nelson	52.00	69.00
Nicholas	36.00	55.00
Ohio	48.00	40.00
Oldham	44.00	35.00
Owen	28.00	40.00
Owsley	12.00	15.00
Pendleton	44.00	50.00
Perry	104.00	143.00
Pike	80.00	100.00
Powell	20.00	20.00
Pulaski	88.00	90.00
Robertson	8.00	10.00
Rockcastle	20.00	43.00
Rowan	19.00	15.00
Russell	36.00	30.00
Scott	72.00	55.00
Shelby	80.00	109.00
Simpson	44.00	65.00
Spencer	12.00	10.00
Taylor	40.00	45.00
Todd	48.00	65.00
Trigg	24.00	35.00
Trimble	4.00	4.00
Union	61.00	80.00
Warren	156.00	138.00
Washington	52.00	55.00
Wayne	16.00	34.00
Webster	20.00	20.00
Whitley	108.00	124.00
Wolfe		
Woodford	24.00	28.00
	$8,127.50	$9,594.00
Gain	$1,466.50	

EXHIBIT "C"

In voice of the property of the Association, September 1, 1923.

Addressograph with 5,000 complete addressed plates with list device, etc.	$ 600.00
Folding Machine	140.00
1 Underwood Typewriter	100.00
1 Desk	79.00
Filing Cabinet	64.75
Rubber Stamps	9.00
Typewriter Cabinet	33.00
Guide Cards	7.48
1-3 Adding Machine	106.25
Typewriter Chair	9.00
1 Electric Fan	18.00
1 Desk Chair	32.50
1 Globe Safe with Fixtures	130.00
1,000 No. 5 2-cent Stamped Envelopes	21.25
1,000 No. 7 2-cent Stamped Envelopes	22.50
500 No. 9 2-cent Stamped Envelopes	13.41
Total	$1,386.14
Reduction for depreciation in machinery	538.75
	$ 847.39

EXHIBIT "D"

Secretary's Monthly Balance Sheet, agreeing with books.

September 1. The balance on hand Sept., 1922 . $3,022.99

1922-23	Expenses	Collections	Balance
September 25	$ 1,745.38	$ 807.52	$ 2,085.13
November 6	2,558.35	721.95	248.73
November 20	927.10	292.08	O. D. 386.29
December 29	915.73	1,144.93	O. D. 157.09
January 31	2,071.79	2,231.97	3.09
Febraury 28	1,617.65	2,116.53	501.97
March 31	1,051.13	1,966.44	1,417.28
April 30	1,162.10	3,350.48	3,605.66
May 31	2,174.90	1,426.95	2,857.71
June 30	1,447.94	1,142.22	2,551.99
July 30	1,149.85	1,042.49	2,444.63
August 30	675.00		1,769.63
	$17,496.92	$16,243.56	
Balance on hand, Sept. 1, 1922		3,022.99	
		$19,266.55	

Balance on hand, Sept. 1, 1923	$ 1,769.63
Total Expenses	17,496.92
	$19,266.55

EXHIBIT "E"

Collections by Secretary on account of Kentucky State Medical Association, corresponding with checks, deposit slips, and receipts, filed herewith:

1922-23	
September 25—To Collections to Date	$ 126.00
November 6—To Collections to Date	153.00
November 20—To Collections to Date	23.00
December 29—To Collections to Date	191.00
January 26—To Collections to Date	1,685.00
February 23—To Collections to Date	1,755.00
March 21—To Collections to Date	1,457.00
April 30—To Collections to Date	2,857.00
May 19—To Collections to Date	780.00
June 25—To Collections to Date	335.00
July 30—To Collections to Date	232.00
Total for Year	$9,594.00

EXHIBIT "F"

Collections by Editor on account of the Journal, corresponding with checks, deposit slips, and receipts filed herewith.

1922-23	
September 25—To Collections to Date	$ 681.52
November 6—To Collections to Date	568.95
November 20—To Collections to Date	269.08

December 10—To Collections to Date	325.09
December 29—To Collections to Date	565.09
December 29—To Interest on Bonds	63.75
January 26—To Collections to Date	546.97
February 28—To Collections to Date	361.53
March 21—To Collections to Date	509.44
April 25—To Collections to Date	493.48
May 19—To Collections to Date	646.95
June 25—To Collections to Date	743.47
June 25—To Interest on Bonds	63.75
July 30—To Collections to Date	810.49
Total for Year	$6,649.56

EXHIBIT "G"

Total membership by Councilor Districts and by Counties for 1922 as compared to that of 1923.

First District—W. W. Richmond, Clinton, Councilor

	1922	1923
Ballard	14	14
Caldwell	14	11
Calloway	19	17
Carlisle	10	10
Fulton	18	15
Graves	32	29
Hickman	12	13
Livingston	9	5
Lyon	6	5
Marshall	15	14
McCracken	41	43
Trigg	5	7
	195	183

Second District—D. M. Griffith, Owensboro, Councilor

	1922	1923
Breckinridge	18	16
Crittenden	8	8
Daviess	52	50
Hancock	1	1
Henderson	18	17
Hopkins	26	28
McLean	5	4
Muhlenberg	26	25
Ohio	10	8
Union	12	16
Webster	5	4
	181	177

Third District—J. H. Blackburn, Bowling Green, Councilor

	1922	1923
Allen	13	11
Barren	14	19
Butler	6	7
Christian	39	33
Cumberland	9	7
Hart	9	8
Logan	23	22
Metcalfe	7	8
Monroe	7	7
Simpson	11	13
Todd	12	13
Warren-Edmonson	35	27
	185	175

Fourth District—C. Z. Aud, Cecilia, Councilor

	1922	1923
Bullitt	9	8
Grayson	15	12
Hardin	26	22
Henry	12	11
Larue	8	5
Meade	6	5
Nelson	14	13
Oldham	11	7
Shelby	20	21
	121	104

Fifth District—C. G. Hoffman, Louisville, Councilor

	1922	1923
Anderson	10	10
Boone	2	5
Carroll	8	7
Franklin	19	18
Gallatin	4	5
Jefferson	344	327
Owen	7	8
Spencer	3	2
Trimble	1	1
	398	383

Sixth District, R. C. McCord, Lebanon, Councilor

	1922	1923
Adair	8	9
Boyle	10	11
Green	6	4
Marion	16	15
Mercer	18	19
Taylor	10	9
Washington	13	11
	81	78

Seventh District—V. G. Kinnaird, Lancaster, Councilor

	1922	1923
Casey	4	4
Clinton	4	3
Garrard	9	8
Lincoln	16	16
McCreary	6	6
Pulaski	21	18
Rockcastle	5	7
Russell	9	6
Wayne	5	6
	79	74

Eighth District—J. E. Wells, Cynthiana, Councilor

	1922	1923
Bourbon	16	19
Bracken	5	7
Campbell-Kenton	85	97
Fleming	13	15
Grant	14	6
Harrison	21	18
Jessamine	10	11
Mason	16	16
Nicholas	8	11
Pendleton	11	10
Robertson	2	2
Scott	18	11
Woodford	4	4
	223	227

Ninth District—J. W. Kincaid, Catlettsburg, Councilor

	1922	1923
Floyd	6	7
Boyd	41	43
Carter	11	17
Elliott	0	0
Greenup	6	6
Johnson	11	8
Lawrence	9	8
Lewis	6	6
Magoffin	0	0
Pike	20	20
	110	115

Tenth District—R. J. Estill, Lexington, Councilor

	1922	1923
Bath	6	9
Breathitt	9	9
Clark	15	20
Estill	4	7
Fayette	80	85
Knott	1	1
Lee	3	3
Letcher	15	8
Madison	27	25
Menifee	0	0
Montgomery	14	14
Morgan	1	2
Owsley	3	3
Perry	24	27
Powell	4	4
Rowan	3	3
Wolfe	0	0
	209	220

Eleventh District—J. S. Lock, Barbourville, Councilor

	1922	1923
Bell	35	36
Clay	9	6
Harlan	31	34
Jackson	3	4
Knox	17	16
Laurel	11	8
Leslie	2	2
Whitley	25	24
	133	130

EXHIBIT "H"

Detailed Statement of Disbursements of W. B. McClure, Treasurer, Kentucky State Medical Association, each made on a Voucher Check signed by Dr. Louis Frank, President, Dr. A. T. McCormack, Secretary, and himself, from September 1, 1921 to September 1, 1922:

1922

September 5—Voucher Check No. 1 $ 50 00
CLARENCE NEIGHBORS, P. M., Bowling Green.
To deposit on postage.

September 11—Voucher Check No. 2 $ 10.00
MAYME SULLIVAN, Louisville.
To reimbursement for postal cards bought for the Ky. Med. Ass'n.

September 30—Voucher Check No. 3 $ 213.05
DR. A. T. McCORMACK, Louisville.
To August expense $ 63.05
To September salary—Secretary 150.00

September 30—Voucher Check No. 4 $ 100.00
DR. L. H. SOUTH, Louisville
To September salary—Business Mgr.

September 30—Voucher Check No. 5 $ 75.00
ELVA GRANT, Louisville.
To September Salary—Bookkeeper..

September 30—Voucher Check No. 6 $ 51.00
DR. FRANK C. SIMPSON, Louisville.
To 25 per cent commission on advertismcnts

September 30—Voucher Check No. 7 $ 51.49
AMERICAN MEDICAL ASS'N. Chicago
To 2,500 inserts for K. M. J.

September 30—Voucher Check No. 8 $ 195.30
S. W. BASSETT CO., Providence, R. I.
To 318 Rolled Gold Buttons K. S. M. A. at 35 eents $ 111.30
To 350 Bangles "Paducah 1922" at 24 cents 84.00

September 30—Voucher Check No. 9 $ 4.05
KOEHLER STAMP & STENCIL CO., Louisville.
To 2 rubber stamps.

September 30—Voucher Check No. 10 $ 68.31
COURIER JOURNAL JOB PRINTING CO., Louisville.
To 2,500 membership cards 1923.
To 2,500 membership cards 1924.

September 30—Voueher Check No. 11 $ 5.00
TANDY SMITH, JR., Paducah.
To sketch and blueprint of 1st Baptist Church.

September 30—Voucher Check No. 12 $ 129.43
BUSH KREBS CO., Louisville.
To 34 cuts.

September 30—Voucher Check No. 13 $ 461.00
THE TIMES JOURNAL PUBLISHING CO., Bowling Green.
To 1,000 sub. cards $ 6.50
September issue, 96 pages, 2,200 307.00
Difference in cost of paper 92.35
20 per cent added 61.40
Printing envelopes 11.55
16 Changes 3.20
Changing ads and rearranging same 9.00
TOTAL $ 491.00
Less 120 errors at 25 cents 30.00
Net $ 461.00

September 30—Voucher Check No. 14 $ 250.00
STATE BOARD OF HEALTH, Louisville.
To legal assitance enforcement to
Medical Practice Act.
Approved by Council and ordered paid by House of Delegates.

September 30—Voucher Check No. 15 $ 17.25
ETHEL B. KRIEGER, Louisville.
Medico-Chirurgical ads.

September 30—Voucher Check No. 16. $ 64.50
B. P. EUBANKS, Bowling Green.
To auditing books and accounts of W. B. McClure.
Treas. and A. T. McCormack Sec'y. for year September 1, 1921 to September 1, 1922
and reporting same $ 50.00
R. R. fare and hotel bill 14.50

October 18—Voucher Check No. 17 $ 55.00
T. F. BEOMON, Paducah.
To 4 days service at Paducah Meeting
Approved by Council and ordered paid by House of Delegates

Oetober 30—Voucher Check No. 18 $ 207.61
DR. A. T. McCORMACK, Louisville
To October salary, Secretary $ 150.00
R. R. expenses to Paducah 23.76
Expense at meeting 33.85

Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 19 $ 157.53
DR. L. H. SOUTH, Louisville.
To October salary, Business Manager $ 100.00
Expense to Lawrenceburg 4.50
Expense 2 trips to Bowling Green 24.50
Expense at Paducah Meeting 28.53
Approved by Counell and ordered paid by House of Delegates.

October 30—Voucher Check No. 20 $ 75.00
ELVA GRANT, Louisville.
To October salary, Bookkeeper.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 21 $ 150.00
STATE BOARD OF HEALTH, Louisville
To legal assistance, enforcement of
Medical Practice Act $ 200.00
Less Credit 50.00
Net $ 150.00
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 22 $ 31.57
BUSH-KREBS, Louisville.
To 9 cuts.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 23 $ 48.75
THE FRANKLIN PRINTING CO., Louisville.
To 500 copies programs, Paducah Meeting.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 24 $ 25.00
WM. J. RUEFF, Louisville.
To 1 cotton banner, ropes and clips.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 25 $ 17.54
TINSLEY-CLINGMAN, Louisville.
To 2 half-tones and 2 duplicates.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 26 $ 551.20
THE TIMES-JOURNAL PUBLISHING CO., Bowling Green.
To October issue, 112 pages, 2,500 $ 385.00
To 20 per cent added 77.00
To difference, cost of paper 119.50
To envelopes 13.50
To 22 changes 4.40
To printing envelopes 2.20
To difference setting tabular work 6 prints 49.60
Total $ 651.20
Less 400 errors at 25 cents each 100.00
Net $ 551.20
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 27 $ 43.24
THE PENDENNIS CLUB, Louisville.
Expenses for Kentucky State Medical Association Officers and Council.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 28 $ 290.00
AMERICAN MEDICAL ASSOCIATION, Chicago.
To 3,500 colored portraits of Dr. J. N. McCormack.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 29 $ 107.69
THE PALMER HOTEL, Paducah.
To Hotel service as follows:
Dr. A. T. McCormack, 4 3-4 days and inc. $ 29.23
Dr. Engelbach, 1 1-4 day 4.75
Dr. Curry, 2 1-2 days 9.75
Dr. Soutb, 4 1-2 days and inc. 27.76
Miss Sullivan, 4 1-2 days 17.50
Miss Atkins, 4 1-2 days and baggage 18.70
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 30 $ 43.50
DR. J. T. REDDICK, Paducab
To reinbursement for Association expense at Paducah Meeting.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 31 $ 12.50
AMERICAN SURETY CO., of New York.
To Bond—Wm. B McClure, Treasurer. No. 0455905.
From October 15, 1922 to October 15, 1923.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 32. $ 5.00
RHODES-BURFORD CO., Paducah.
To 24' Exbibitors tables.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 33 $ 43.22
DR. W. B. McCLURE, Treasurer, Lexington.
To expense as Treasurer.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 34 $ 5.50
DR. R. C. McCHORD, Lebanon.
To expense as Councilor.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 35 $ 23.50
DR. W. W. RICHMOND, Clinton.
To expense as Councilor.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 36 $ 45.69
DR. C. Z. AUD, Cecelia.
To expense as Councilor.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 37 $ 44.39
DR. J. E. WELLS, Cynthiana.
To expense as Councilor.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 38 $ 23.81
DR. J. W. KINCAID, Catlettsburg.
To expense as Councilor.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 39 $ 25.52
DR. D. M. GRIFFITH, Owensboro.
To expense as Councilor.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 40 $ 21.88
DR. J. H. BLACKBURN, Bowling Green.
To expense as Councilor.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 41 $ 39.54
DR. J. S. LOCK, Barbourville.
To expense as Councilor.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 42 $ 154.84
LUDLOW PETTY, P. M., Louisville.

To 1 m No. 9, 2 cent stamped envelopes	$ 23.32	
To 6 m No. 5, 2 cent stamped envelopes at $21.92 per M.	131.52	

Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 43 $ 65.06
MAYME SULLIVAN, Louisville.

To expense at State Meeting	$ 40.06	
To Honorarium	25.00	

Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 44 $ 51.01
MARY ATKINS, Louisville.

To expense at State Meeting	$ 26.01	
To Honorarium	25.00	

Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 45 $ 23.76
DR. D. P. CURRY, Louisville.
To expense to State Meeting.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 46 $ 69.50
MRS. E. B. KRIEGER, Louisville.
To securing the ads for Journal.
Approved by Council and ordered paid by House of Delegates.

October 30—Voucher Check No. 47 $ 100.00
FIRST BAPTIST CHURCH, Paducah.
To use of church during State Meeting.
Approved by Council and ordered paid by House of Delegates.

November 29—Voucher Check No. 48 $ 150.00
DR. A. T. McCORMACK, Louisville.
To November salary, Secretary.

November 29—Voucher Check No. 49 $ 100.00
DR. L. H. SOUTH, Louisville.
To November salary, Buisness Manager.

November 29—Voucher Check No. 50 $ 75.00
ELVA GRANT, Louisville.
To November salary, Bookkeeper.

November 29—Voucher Check No. 51 $ 398.86
THE TIMES-JOURNAL PUBLISHING CO., Bowling Green.

To November issue, 88 pages, 2,300	$ 410.58	
Printing 250 envelopes and postage	1.50	
To 28 changes	5.60	
To 2,500 envelopes	13.88	
Printing envelopes	2.30	
Total	$ 433.86	
Less 140 errors at 25 cents	35.00	
Net	$ 398.86	

November 29—Voucher Check No. 52 $ 3.24
POSTAL TELEGRAPH & CABLE CO., Louisville.
To telegrams.

November 29—Voucher Check No. 53 $ 200.00
STATE BOARD OF HEALTH, Louisville.
To legal assistance, enforcement of Medical Practice Act.

December 22—Voucher Check No. 54 $ 150.00
DR. A. T. McCORMACK, Louisville.
To December salary, Secretary.

December 22—Voucher Check No. 55 $ 117.05
DR. L. H. SOUTH, Louisville.

To R. R. fare to Danville	$ 4.02	
Hotel	2.50	
R. R. Lexington to Louisville	3.03	
Pullman	.75	
Hotel	6.00	
Breakfast	.75	
	$ 17.05	
To December salary—Business Manager	$ 100.00	

December 22—Voucher Check No. 56 $ 361.42
WM. WHITFORD, Chicago.

To R. R. expenses Paducah and return	$ 38.82	
Reporting 4 days and 3 evenings	55.00	
Transcript of proceedings of House of Delegates, general sessions and discussions	267.60	

December 22—Voucher Check No. 57 $ 12.26
BUSH-KREBS, Louisville.
To 3 sq. cuts.

December 22—Voucher Check No. 58 $ 75.00
ELVA GRANT, Louisville.
To December salary, Bookkeeper.

December 22—Voucher Check No. 59 $ 200.00
STATE BOARD OF HEALTH, Louisville.
To legal services for Medical Practice Work.

1923.
January 31—Voucher Check No. 60 $ 150.00
DR. A. T. McCORMACK, Louisville.
To January salary, Secretary.

January 31—Voucher Check No. 61 $ 100.00
DR. L. H. SOUTH, Louisville.
To January salary, Business Manager.

January 31—Voucher Check No. 62 $ 75.00
ELVA GRANT, Louisville.
To January salary, Bookkeeper.

January 31—Voucher Check No. 63 $ 245.25
DR. J. G. HALE, Big Clifty.
Attorney fee and Court Cost in case of Ruppert Robbins vs. J. G. Hale.

January 31—Voucher Check No. 64 $ 579.62
TALBOTT & WHITLEY, Att'ys. Burbon Co.
Att'y Fee and Court Cost in case of Chas. Morrison vs. C. G. Daugherty.

January 31—Voucher Check No. 65 $ 200.00
STATE BOARD OF HEALTH OF KY., Louisville.
To Legal services for Medical Practice Work.

January 31—Voucher Check No. 66 $ 10.00
THE AMERICAN PUBLIC HEALTH ASSOCIATION, New York City.
To dues for 1923—Ky. Medical Ass'n.

January 31—Voucher Check No. 67 $ 3.42
MEFFERT EQUIPMENT CO., Louisville.
To office supplies.

1923.
January 31—Voucher Check No. 68 $ 554.00
THE TIMES-JOURNAL PUBLISHING CO., Bowling Green.

To December issue, 120 pages 2,300 copies	$ 380.00	
Difference in cost of paper	85.00	
20 per cent added	76.00	
30 changes	6.00	
2,500 envelopes	13.88	
Printing envelopes	2.30	
47,652 Em 6 point	23.82	
Total	$ 587.00	
Less 132 errors at 25 cents each	33.00	
Net	$ 554.00	

January 31—Voucher Check No. 69 $ 4.50
BUSH-KREBS CO., Louisville.
To 3 cuts.

January 31—Voucher Check No. 70 $ 150.00
FRED FORCHT, Louisville.
To Attorney's fee from July 1, 1922, to January 1, 1923.

February 20—Voucher Check No. 71 $ 4.00
LOUIS VISSMAN, Clerk, Jefferson Circuit Court.
To Jury fee, case of Emma Veatch vs. David Y. Keith.

February 28—Voucher Check No. 72 $ 158.35
DR. A. T. McCORMACK, Louisville.

To expense to Newport	$ 8.35	
To February salary, Secretary	150.00	

February 28—Voucher Check No. 73 $ 100.00
DR. L. H. SOUTH, Louisville.
To February salary, Business Manager.

February 28—Voucher Check No. 74 $ 75.00
ELVA GRANT, Louisville.
To February salary, Bookkeeper.

February 28—Voucher Check No. 75 $ 200.00
STATE BOARD OF HEALTH, Louisville.
To Legal Services for Medical Practice Work.

February 28—Voucher Check No. 76 $ 106.52
LUDLOW PETTY, P. M., Louisville.

To 6 M No. 5 stamped envelopes at $21.92	$ 131.52	
Less stamp check	25.00	

February 28—Voucher Check No. 77 $ 25.00
LUDLOW PETTY, P. M., Louisville.
To stamps.

February 28—Voucher Check No. 78 $ 6.25
KENTUCKY BOOK MFG. CO., Louisville.

2 Vol. A. M. A. Journals bound	$ 4.50	
1 Vol. Ky. Med. Journals bound	1.75	

February 28—Voucher Check No. 79 $ 17.63
BUSH-KREBS CO., Louisville.
To 5 square cuts.

1923.
February 28—Voucher Check No. 80 $ 165.50
FRED FORCHT, Atty., Louisville.
Court cost, etc., case of R. E. Veatch vs. Dr. D. Y. Keith.

February 28—Voucher Check No. 81 $ 5.00
MURILLO STUDIO. St. Louis, Mo.
To 1 copy, minature of Dr. Sneed.

February 28—Voucher Check No. 82 $ 640.15
TIMES-JOURNAL PUBLISHING CO., Bowling Green.

To January issue 100 pages, 3,000 copies	$ 618.00	
To 28 changes	5.60	
To 2,500 envelopes	14.25	
To printing envelopes	2.30	

February 28—Voucher Check No. 83 $ 114.25
TIMES-JOURNAL PUBLISHING CO., Bowling Green.
To 500 L. H. and 500 env. Treas $ 6.50
To 500 L. H. and 500 env. Chr. of Council 6.50
To 250 L. H. and 250 env. 3rd V. P. 4.25
To 250 L. H. and 250 env. 2nd V. P. 4.25
To 250 L. H. and 250 env. 1st V. P. 4.25
To 250 L. H. and 250 env. Pres. Elect 4.25
To 250 L. H. and 250 env. C. 1st Dist. 4.25
To 500 L. H. and 500 env. 4th Dist. 6.50
To 250 L. H. and 250 env. C. 5th Dist. 4.25
To 250 L. H. and 250 env. C. 7th Dist. 4.25
To 250 L. H. and 250 env. C. 10th Dist. 4.25
To 500 L. H. and 500 env. C. 9th Dist. 6.50
To 500 L. H. and 500 env. C. 8th Dist 6.50
To 500 L. H. and 500 env. C. 2nd Dist. 6.50
To 500 L. H. and 500 env. C. 3rd Dist. 6.50
To 250 L. H. and 250 env. C. 1st Dist. 4.25
To 1,000 L. H. and 1,000 env. Pres. 10.50
To 5,000 L. H. and 5,000 env. C. Sec'y. 20.00

March 3—Voucher Check No. 84 $ 50.00
CLARENCE NEIGHBORS, Postmaster, Bowling Green.
To deposit on postage for Journals.

March 31—Voucher Check No. 85 $ 150.00
DR. A. T. McCORMACK, Secretary, Louisville.
To March salary.

March 31—Voucher Check No. 86 $ 100.00
DR. L. H. SOUTH, Louisville.
To March salary, Busines Manager.

March 31—Voucher Check No. 87 $ 75.00
ELVA GRANT, Louisville.
To March salary, Bookkeeper.

March 31—Voucher Check No. 88 $ 200.00
STATE BOARD OF HEALTH, Louisville.
To Legal Services for Medical Practice Work for March.

March 31—Voucher Check No. 89 $ 120.70
DR. S. J. SMOCK, LaGrange.
To Att'y. fee and Court Costs in Malpractice suit, case of Rosa Coulter vs. Dr. S. J. Smock.

1923.
March 31—Voucher Check No. 90 $ 5.00
EDITH M. COLE, Louisville.
To reporting case of Veatch vs. Keith & Keith.

March 31—Voucher Check No. 91 $ 51.50
DR. H. M. FULTS, Carter.
To Att'y. fee and Court Costs in case against Dr. Fults.

March 31—Voucher Check No. 92 $ 3.38
BUSH-KREBS CO., Louisville.
To 1 sq. H. T. Medical View cut.

March 31—Voucher Check No. 93 $ 34.00
TIMES-JOURNAL PUBLISHING CO., Bowling Green.
To 200 L. H. and 20 env., office of eye, ear, nose etc. $ 4.00
To 1,000 L. H. and 1,000 env., secy. 30.00

March 31—Voucher Check No. 94 $ 203.05
TIMES-JOURNAL PUBLISHING CO., Bowling Green.
To February issue, 2,350, 70 pages $ 318.00
20 changes 4.00
Printing envelopes 2.30
2,500 envelopes 14.25

Total $ 338.55
Less—By 11 days delay $ 110.00
By 40 Journals short at 25 cents 10.00
By 62 errors at 25 cents 15.50 135.50

Net $ 203.05

March 31—Voucher Check No. 95 $ 58.50
MRS. E. B. KREIGER, Louisville.
To securing ads.

April 30—Voucher Check No. 96 $ 150.00
DR. A. T. McCORMACK, Secretary, Louisville.
To April salary.

April 30—Voucher Check No. 97 $ 100.00
DR. L. H. SOUTH, Louisville.
To April salary, Business Manager.

April 30—Voucher Check No. 98 $ 75.00
ELVA GRANT, Louisville.
To April salary, Bookkeeper.

April 30—Voucher Check No. 99 $ 200.00
STATE BOARD OF HEALTH OF KENTUCKY.
To Legal Service for Medical Practice Work for April.

1923.
April 30—Voucher Check No. 100 $ 150.00
W. C. McCHORD, Attorney.
To attorney fee in case of Harlow vs. Yates.

April 30—Voucher Check No. 101 $ 100.00
J. B. YATES.
For reimbursement of Mr. Mayes.

April 30—Voucher Check No. 102 $ 85.00
FRED FORCHT, Attorney.
To attorney fee in case of Wm. C. Dieruf vs. Dr. George S. Brozowiski $ 35.00
To attorney fee in Jefferson Circuit Court Case of Dr. Tuley, Dr. Gardner, Jillson and Scott. $ 50.00

April 30—Voucher Check No. 103 $ 10.00
LUDLOW PETTY. P. M.
To stamps.

April 30—Voucher Check No. 104 $ 5.40
JOHN W. WARE.
To deposition of the plaintaiff, Mrs. Ada Lesher, as if on cross-examination —
11 pages at 40 cents $ 4.40
To paying of Special Bailiff for notice and subpoena $ 1.00

April 30—Voucher Check No. 105 $ 286.70
TIMES-JOURNAL PUBLISHING CO.
To March isue, 2,300, 90 pages $ 399.90
20 changes 6.00
Printing envelopes 2.30
2,500 envelopes 14.25
$422.45
Less by twelve days late $ 120.00
Less by 63 errors 15.75 $ 135.75

May 31—Voucher Check No. 106 $ 150.00
DR. A. T. McCORMACK, Secretary, Louisville.
To May salary.

May 31—Voucher Check No. 107 $ 111.64
DR. L. H. SOUTH, Louisville.
To May salary, Business Manager $ 100.00
To R. R. fare, pullman, bus on trip to Bowling Green, Ky. 11.64

May 31—Voucher Check No. 108 $ 75.00
ELVA GRANT, Louisville.
To May salary, Bookkeeper.
1923.

May 31—Voucher Check No. 109 $ 200.00
STATE BOARD OF HEALTH OF KENTUCKY.
To legal services for Medical Practice work for May.

May 31—Voucher Check No. 110 $ 76.96
BUSH KREBS CO., Louisville.
To 25 cuts for Journal.

May 31—Voucher Check No. 111 $ 5.00
GRAHAM & LONGSTREET, Louisville.
To reporting evidence for Defendant in case of Veatch vs. Dr. D. Y. Keith.

May 31—Voucher Check No. 112 $1,309.90
DR. J. C. HOOVER, Owensboro, Ky.
To Court Costs $ 509.90
To Attorney's fee 800.00

In case of W. B. McCormack vs. Dr. J. C. Hoover.

May 31—Voucher Check No. 113 $ 121.40
THE TIMES-JOURNAL PUBLISHING CO.
To April issue of 2,350—76 pages $ 309.10
To 30 changes 6.00
To printing envelopes 2.30
To 2,500 envelopes 14.25
To tabulating work to 6 point 2.50
$ 334.15
Less by 21 days' delay at $10.00 each $ 210.00
Less by 11 errors at 25 cents each 2.75 $ 212.75

May 31—Voucher Check No. 114 $ 50.00
C. NEIGHBORS, P. M., Bowling Green.
To deposit for postage on Journals

May 31—Voucher Check No. 115 $ 75.00
LAWRENCE K. RICE, Middlesboro, Ky.
To attorney fee in case of Crutchfield vs. H. L. Gragg, W. K. Evans and W. K. Evans, in the Bell Circuit Court.

June 30—Voucher Check No. 116 $ 150.00
DR. A. T. McCORMACK, Secretary, Louisville.
To June salary.

June 30—Voucher Check No. 117 $ 107.20
DR. L. H. SOUTH, Louisville.
To June salary, Business Manager $ 100.00
To June expense to Crab Orchard Hotel 7.20

June 30—Voucher Check No. 118 $ 100.00
FRED FORCHT, Attorney.
To Att'y. fees in cases of:
Paul A. Webster vs. Dr. Harvey B. Scott $ 50.00
Eva Ford vs. Dr. Harvey B. Scott 50.00

June 30—Voucher Check No. 119 $ 75.00
ELVA GRANT, Louisville.
To June salary, Bookkeeper.
1923.

June 30—Voucher Check No. 120 $ 200 00
STATE BOARD OF HEALTH OF KENTUCKY.
To legal services for Medical Practice work for June.

June 30—Voucher Check No. 121 $ 32.90
PENDENNIS CLUB, Louisville.
Expenses of meeting for Kentucky State Medical Association officers and Council.

June 30—Voucher No. 122 $ 229.04
LUDLOW PETTY, P. M.
To 6 M No. 5 2 cent envelopes at $21.92 per M. $ 131.52
To 4 M No. 8 2 cent envelopes at $22.88 per M. 91.52
Stamps 6.00
$ 229.04

June 30—Voucher Check No. 123 $ 205.45
TIMES-JOURNAL PUBLISHING CO.
To May issue, 2,200 issues, 84 pages $ 404.00
To Envelopes printed 2.20
To 25 changes 5.00
To Envelopes 14.25
$ 425.45
Les 22 days late at $10.00 per day 220.00
$ 205.45

June 30—Voucher Check No. 124 $ 348.35
TIMES JOURNAL PUBLISHING CO.
To June issue, 2,300, 72 pages $ 326.20
To printing envelopes 2.30
To 28 changes 5.60
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$ 348.35

July 31—Voucher Check No. 125 $ 150.00
DR. A. T. McCORMACK, Secretary, Louisville
To July salary.

July 31—Voucher Check No. 126 $ 100.00
DR. L. H. SOUTH, Louisville.
To July salary, Business Manager.

July 31—Voucher Check No 127 $ 75.00
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July 31—Voucher Check No. 128 $ 200.00
STATE BOARD OF HEALTH.
To legal service for Medical Practice Work for July 1923.

July 31—Voucher Check No. 129 $ 87.50
MRS. E. B. KREIGER, Louisville.
To securing the ads.

July 31—Voucher Check No. 130 $ 25.00
THE ELECTRIC BLUE PRINT & SUPPLY CO.
To floor space plan for Exhibit.

July 31—Voucher Check No. 131 $ 3.50
KOEHLER STAMP & STENCIL CO.
To 1 signature stamp.

July 31—Voucher Check No. 132 $ 508.85
TIMES JOURNAL PUBLISHING CO.
To July issue, 2,200, 116 pages $ 476.40
To 30 changes 6.00
To 2,500 envelopes 14.25
To printing envelopes 2.20
To setting and tabulating 10.00
$ 508.85

August 31—Voucher Check No. 133 $ 150.00
DR. A. T. McCORMACK, Secretary, Louisville.
To August salary

August 31—Voucher Check No. 134 $ 100.00
DR. L. H. SOUTH, Louisville.
To August salary, Business Manager.

August 31—Voucher Check No. 135. $ 75.00
ELVA GRANT, Louisville.
To August salary, Bookkeeper.

August 31—Voucher Check No. 136 $ 200.00
STATE BOARD OF HEALTH
To legal service for Medical Practice work for August.

August 31—Voucher Check No. 137 $ 150.00
FRED FORCHT, Attorney, Louisville.
To retainer fee, January 1, 1923 to July 1, 1923.

TOTAL $17,496.92



BOWLING ALLEYS AND BILLIARD ROOM



A LAKE VIEW

COMMERCIAL EXHIBITS

The Horlick's Malted Milk Co. Racine, Wis.

Booth 1.—The Horlick's Malted Milk Company, Racine, Wisconsin, invite the aattention of all to their exhibit, Space No. 1, where the well-known "Horlick's" the Original Malted Milk will be interestingly presented. The representative in attendance will explain the use of Horlick's Malted Milk in the feeding of infants and invalids, and in special conditions. Printed matter and samples will be supplied, and your inquiries and discussions invited.

Medical Protective Co.

Booth 2.—The Medical Protective Company of Fort Wayne, Indiana, will hold forth with samples of its professional proteetive contract. Mr. D. H. Bixler, state representative for Kentueky, will be in charge, and his experience as one of the veterans of the company which originated Malpraetice Protection and has been for twenty-five years in doing this one thing right, has very well equipped him to discuss all phases of this important problem with those doctors who stop at this booth.

Kentucky Optical Co.

Booth 3.—We will display the Universal Ophthalmometer which employs the well-known optical system of Javal and Schiotz in which the doubling of the images is affeeted by a Wollaston bi-refringent quartz prism, also

Genothalmie Retinoseopes & Ophthamoscopes.

De Zeng NEW Retinoseopes & Ophthalmoscopes which use the regular flash light lamps.

De Zong Phorometers.

Woolff Ski-Optometer.

Welch-Allyn direet illuminating Ophthalmoscope, and other instruments used by refraeting physieians.

We will have a complete line of the latest frames and lenses on display including the new THIN LITE and SOFT LITE lenses.

We are the only Exclusively Wholesale Optical house in this state, earrying a complete line of the various manufaeturers merchandise that is KENTUCKY owned and controlled. We are a Kentueky concern.

The Dick X-Ray Co., Louisville, Ky.

Booth 4.—The Dick X-Ray Co., 411 W. Chestnut street, Louisville, Ky., will exhibit the new KELEKET 7 INCH TRANSFORMER along with the KELEKET MOBILE UNIT. These two instruments are distinctly KELEKET, both in design and ease of manipulation.

The new KELEKET 7 INCH TRANSFORMER is especially designed to take care of all heavy duty radiographic and fluoroscopic work and will do any character of work, except deep therapy. The machine is compact, quiet and powerful. It is possible to deliver up to 200 milliamperes current through a tube with this machine. It will be well worth while to examine it carefully, if you are at all interested in X-Ray equipment.

The KELEKET MOBILE UNIT, which has won distinct fame as a radiographic and fluoroscopic machine in the doctor's private office and also in hospitals, will also be exhibited for those who want a small, complete X-Ray outfit. This unit is being used by many of the leading surgeons and physicians, who desire a simple and compaet installation.

You are cordially invited to visit our booth and go over this equipment in detail.

The Chas. H. Phillips Chemical Co.

Booth 5.—The Chas. H. Phillips Chemical Co., New York, and London, as usual, displaying their ethical products notably "Milk of Magnesia"—the pure oxide of magnesia in hydrated form—most potent and agreeable of aeid neutralizer and "Phillips Digestible Cocoa." A delicious nutritious and easily digested food beverage.

SCIENTIFIC EXHIBIT

McIntosh Electrical Corporation Louisville

Booth 8.—Modern Electro-Medical Apparatus High Frequeney, Low Frequency, Produeing Thermal, Physieal and Chemical Effects through Scientific Principles of applieation.

The Max Wocher & Son Co.

Booth 11-12.—In reply to your letter of July 12, the exhibit at the meeting of the Kentucky State Medical Association, will be in charge of our genial representative, Mr. C. H. Lehman. We will have a display of the latest and most-up-to-date instruments and paraphernalia used in the medical profession and hospitals.

Victor X-Ray Corporation Chicago, Ill.

Booth 13.—The Victor X-Ray Corporation will display the Victor Stabilized Mobile X-ray Unit—an outfit designed as the result

of considerable research and experimental work and after a close study of the present day requirements of physicians in general practice, desirous of a light, compact and mobile X-ray outfit for use in radiographic and fluoroscopic work. Such exclusive features as Auto transformer control, Circuit Breaker and Stabilizer have been incorporated in this unit with the result that consistently good results are assured.

We will also have on exhibit Victor Air and Water-Cooled Quartz Lamp equipment, now in such wide use throughout the country and fast coming to the universally considered an indispensable therapeutic aid.

The Victor Portable High Frequency Outfit will also be on display. This apparatus is designed for complete High Frequency service and owing to its portability has of late been used to a considerable extent in the treatment of pneumonia at the home of the patient.

The new Victor Portable Stereo-Roentgen Table will also be on display. This compact and truly serviceable outfit is adaptable for use in radiographic work of practically any part of the body in either vertical or horizontal positions. This unit comes as a welcome addition to the laboratory equipment of numerous X-ray users.

E. R. Squibb and Sons, New York

Booth 14.—The Squibb Laboratories will as usual occupy a prominent place among the commercial exhibits this year, and their display will be materially different from that shown in previous years.

It will be devoted primarily to showing in a graphic way, the production of some of their more important, newer products. As may be expected from the Squibb Laboratories, these will be of actual scientific interest to the physician.

Tucker X-Ray Co., Nashville, Tenn.

Booth 19.—We will show at the state meeting the following equipment; The Acme International Bedside Roentgen Unit which has been designed to fill the needs of a general practitioner for routine office work in checking fractures and simpler forms of X-Ray work, also for ward work in hospitals where it is desirable to check up fracture cases after they have been put up. This unit is a complete plant in itself and takes up very little room, using the 30 M. A. Radiator Type Coolidge Tube which gives ample power for radiographic work. We will also show a new type of negative illuminator using an indirect system of lighting which eliminates light and dark shadows and brings out the finest detail on X-Ray films. We will also have other minor accessories such as cassettes, screens, etc.

Mellin's Food Co., Boston, Mass.

Booth 20.—Mellin's Food Company of Boston will occupy Space 20. Holding the opinion that physicians are especially appreciative of detailed information in regard to such products that they find applicable in their practice, representatives of this company, well qualified to discuss the subject, will be prepared to give individual attention to all inquiries.

EFFECTIVE DISPLAY BY NUJOL LABORATORIES

Standard Oil Co., N. J.

Booth 22.—Nujol Laboratories have taken generous space in the display room at the annual meeting next month. Their display is extremely handsome and well in keeping with the character of the occasion. A blue velvet background serves as a means of displaying enlarged X-Ray photographs of the pathological intestinal tract. In front of this curtain is a modest arrangement of the "Nujol Group"—bottle, carton, clock and spoon. This company's product Mistol, for the nose and throat, we believe will also be represented.

The booth will be presided over by Dr. Edwin F. Hitchcock, who has been representing "Nujol" at the various State Medical conventions.

W. B. Saunders Co., Philadelphia, Pa.

Booth 25.—W. B. Saunders Company of Philadelphia, Booth 25, will exhibit new books and new editions, including Abts' Pedratries, the new Mayo Clinic Volume, Deaver and Reimausis excursions into surgical subjects, Foster's examination of patients, Gant's three volume work on Diseases of the Rectum, Anus and Colon; Labat's Regional Anesthesia; new edition of Crile's work on the Thyroid Gland; new (9) edition of Scudder's Treatment of Fractures; Lewellyn Barker's Clinical Medicine; Jackson's Bronchoscopy; Stevens' new Practice of Medicine; latest numbers of the Medical Clinics of North America; new (6th) edition of Stevens' Therapeutics; new (2nd) edition of Peterson, Haines & Webster's two volume work on Legal Medicine and Toxicology, and Thomas' "The Successful Physician"; Williams' Anatomy of Physiology, and Personal Hygiene applied by the same author. Also advance sheets of important new works.

REPORT OF THE BUSINESS MANAGER

To The House Of Delegates:

This year 28,300 copies of the Journal were printed and distributed to the members at a cost of $6,622.

The following table shows the work that is being done by the members, who are its owners, through its columns:

Journal Inventory

Number of pages of reading matter	730
Number of advertising pages	394
Official announcements	29
Editorials	70
Scientific Editorials	11
Original Articles	186
County Society Minutes	89
Book Reviews	36
News Items	6
Discussions	255
Number of Journals distributed	28,300

The minutes of the county societies are published each month for every one whose secretary sends them in. These reports are so indexed that the secretaries can use the Journals for their permanent record. Each year the December issue publishes a complete index and articles are cross-indexed for ready reference both by subjects and contributors.

It is of the utmost importance for the members to note the advertising income of the Journal. It is our advertisers who really publish the Journal for us and in ordinary gratitude we ought to patronize them. It is important for the members to remember that any dealings they have with our advertisers are protected by the guarantee of the Journal for advertised products. This makes it perfectly safe for any proposition that is advertised in the Journal to be accepted and, other things being equal, it is respectfully submitted that the members should give preference to those who are helping to make our Journal what we all consider the biggest and best of the State journals.

Society Activities

The following statistics are published to show the activities of the different societies as they make their own showing in the Journal. Unfortunately, many of our best societies meet regularly but do not send in their minutes for publication.

	Minutes	Original Articles		Minutes	Original Articles
Adair	1	0	Larue	1	0
Allen	2	0	Laurel	0	0
Anderson	1	0	Lawrence	1	0
Ballard	1	0	Lee	0	0
Barren	3	2	Leslie	0	0
Bath	0	0	Letcher	0	0
Bell	1	0	Lewis	0	0
Boone	0	0	Lincoln	1	2
Bourbon	2	1	Livingston	0	0
Boyd	1	2	Logan	1	1
Boyle	0	0	Lyon	1	0
Breathitt	0	0	McCracken	1	2
Breckinridge	0	0	McCreary	0	0
Bullitt	2	3	McLean	0	0
Butler	2	0	Madison	0	0
Caldwell	0	0	Magoffin	0	0
Calloway	0	0	Marion	1	0
Campbell-Kenton	1	2	Marshall	1	0
Carlisle	3	6	Mason	0	0
Carroll	0	0	Meade	1	0
Carter	0	0	Menifee	0	0
Casey	0	0	Mercer	0	0
Christian	6	3	Metcalfe	1	0
Clark	1	1	Monroe	0	0
Clay	0	0	Montgomery	0	1
Clinton	0	0	Morgan	0	0
Crittenden	0	0	Muhlenberg	1	0
Cumberland	1	0	Nelson	2	1
Daviess	2	1	Nicholas	1	0
Estill	1	0	Ohio	0	0
Fayette	1	6	Oldham	1	0
Fleming	5	0	Owen	0	0
Floyd	0	0	Owsley	0	0
Franklin	0	0	Pendleton	1	0
Fulton	1	1	Perry	0	0
Gallatin	0	0	Pike	1	0
Garrard	1	0	Powell	0	0
Grant	1	0	Pulaski	0	0
Graves	1	1	Robertson	0	0
Grayson	0	0	Rockcastle	1	0
Green	0	0	Rowan	0	0
Greenup	0	0	Russell	1	0
Hancock	0	0	Scott	0	1
Hardin	0	0	Shelby	2	1
Harlan	0	0	Spencer	1	0
Harrison	4	2	Simpson	0	0
Hart	0	1	Taylor	0	0
Henderson	1	1	Todd	3	0
Henry	2	2	Trimble	0	0
Hickman	1	0	Trigg	0	0
Hopkins	0	0	Union	0	0
Jackson	1	0	Warren	1	0
Jefferson	4	44	Washington	0	0
Jessamine	0	0	Wayne	3	0
Johnson	0	0	Webster	1	0
Knott	0	0	Whitley	1	0
Knox	2	0	Wolfe	0	0
			Woodford	1	0

Respectfully submitted,

L. H. South,
Business Manager.

Urticaria Caused by Light. W. W. Duke, Kansas City, Mo. (Journal A. M. A., June 23, 1923), reports the case of a woman who became so sensitive to light that on two and one-half minutes' exposure of the skin to direct sunlight, typical itching hives, with erythma of the skin, invariably appeared over the area exposed. The reaction was almost identical to the reaction of allergic individuals on intracutaneous injection of substances to which they are sensitive. Constitutional symptoms were felt on two occasions when a large area of the skin was exposed to light. Local tolerance was developed by repeated exposure of small areas of the skin to light, but it did not last indefinitely. This reaction was produced only by light of a wave length transmittable by violet glass.

ORIGINAL ARTICLES

DISEASES OF THE GALL BLADDER.*

By E. W. Northcutt, Covington

The upper right quadrant of the abdomen is the banana peel of abdominal surgery. There is no branch of surgery which commands more attention of the medical profession today, and probably none more unsettled, especially as regards causes and treatment of the various lesions affecting this region of the human anatomy, one school advocating one line of treatment while another school is enthusiastic over a different line of treatment. There is hardly an issue of a medical journal but that a lesion in this region is discussed. This is evidence of the unsettled state of the question and of its importance. I shall endeavor in this paper to call attention to some points in etiology, symptoms, diagnosis and treatment of a few of the more important lesions affecting the gallbladder. Needless to say, I shall be able to speak only briefly of each one, as volumes could be written on any one of them.

Gall stones is the condition usually understood by the layman to be present when the doctor speaks of gallbladder disease. This, I believe, is due to the impression gained in the early days of gallbladder surgery, before the days of focal infection, of bacteriology, the Lyon procedure, and other refined diagnostic methods of which we now have the advantage. During the days when the chief symptoms were repeated attacks of agonizing pain in the right upper quadrant, accompanied with or followed by jaundice. We now know that one may have either or both of these symptoms without gallstones, or he may have gallstones without either of these symptoms, the stones often being found when operating for some other trouble in which there was no history or gallbladder disease obtainable.

Race. The black race seems to enjoy a large degree of immunity from gallstones. This may be due largely to the more primitive and active life they lead. According to Rodman, gallstones are rare in negro race. He reports that he never saw a case of gallstones in the negro race during his entire 15 years of surgical experience in Louisville, Kentucky, where there is a large clinic among this race. Neither could he find a single case in either the clinical or post-mortem records of the Louisville City Hospital in 1898. He encountered them but once during 10 years practice in Philadelphia. His experience is corroborated by Tiffany and others.

Sex. Gallstones are more common in women than in men. 76 per cent of 1800 cases reported by the Mayos were women. (1). The less active life they live, the lacing, the constipation which is much more common in the female sex, are thought to be important factors in this. Pregnancy probably has an influence, the liver having to care for two individuals instead of one, 90 per cent of women with gallstones having borne children.

Age. Although a disease of middle or later life, no age is immune—they may be encountered at any age from the cradle to the grave. According to Moynihan, Mayo Robson, Murphy and Rodman, as quoted by Rodman, the average age is 45 years. In Moynihan's cases the average duration of symptoms was 5 1-2 years. Cases of gallstones have been reported in the new born.

The gallbladder is the place where gallstones are usually found and the place where they are usually formed, although they may be formed in the ducts, especially the hepatic ducts.

Gallstones vary in composition, size and number. Nearly 80 per cent of gallstone substance is cholesterin. They may be single—often one large stone filling the gallbladder, or there may be several hundred small ones. Hobson removed one weighing 3 1-2 ounces and as large as a goose egg.

Causes. Important among the predisposing causes of gallstone are sedentary living, constipation, lacing and pregnancy, lack of free drainage, as from pressure on the common duct or swelling of the mucuous membrane.

Infection is now considered the direct cause of gallstone disease in the vast majority of cases. The most active of these micro organisms have been thought to belong to the colon group. This is being questioned, however, at the present time by some investigators. They claim that the ordinary pyogenic organisms are the primary cause in the majority of cases. It is often possible to isolate organisms from the nucleus of stones. There may be infection of the gallbladder without stones, but there are seldom, if ever, stones without infection.

Cholecystitis is usually divided into three types. First, the acute phlegmonous form. This constitutes one of the most serious situations that is encountered in gallbladder disease. The gallbladder is often friable or even gangrenous, filled with virulent pus, and held in a mass of adhesions that make a satisfactory approach very difficult. We may find an abscess that has been formed during a slow perforation and has had time to become walled off, or there may occur an acute perforation, not giving time for nature to form any defensive barrier against the sudden onslaught of virulent pus which spreads unhindered through the general peritoneal

*Read before Campbell-Kenton County Medical Society.

cavity, producing a free septic peritonitis. One is sometimes so fortunate as to have the perforation in abscess formation communicate with the intestinal tract, or even externally.

Second is the subacute type. In this form there are recurring attacks of pain, tenderness in the gallbladder region, temperature, chills, sweat and jaundice. The gallbladder sometimes becomes very large in this form of cholecystitis, and upon being opened it is found to be filled with a foul-smelling mixture of bile and mucus. There often develops in this condition a cholangettis or pancreatitis, which may prove fatal.

Third is the chronic form, and the one that presents so many diriculties in diagnosis. It is here that every method of diagnosis, history, physical examination and laboratory technic is put to the test. There may be an occasional rise in temperature with a tired, draggy feeling more marked in the afternoon, a dull aching in the back about the right scapula, which would cause one to suspect T. B. The gastric disturbances make it necessary to exclude ulcer. The right kidney and appendix also come in for consideration. Sometimes we may even, in desperation, say there is nothing the matter, call him a neurotic, and refer him to one of our neurological friends for cold baths and long walks.

The cause of cholecystitis of course is infection. The source of this infection and the manner in which it reaches the gallbladder is a subject upon which some of our best men disagree. The theories of focal infection and the selective action of bacteria advanced by Rosenow as the cause of infection in this, as well as many other regions of the body, seem to have more supporters than any other at the present time. While of course it is altogether possible for infection to occur in other ways his very excellent work leaves little room for doubt as to this being one important source of disease.

In his work, 80 per cent of 41 animals injected with 12 strains of strep from cholecystitis developed lesions in the gallbladder, while only 4 per cent of 44 animals injected with 34 strains from miscellaneous sources developed lesions in this organ. He also found that strains from acute cholecystitis produced more marked lesions than strains from the chronic forms. Indeed, so well established has this work become, and so universally taught and accepted, that today we hear the layman talking on the street of focal infection, and we see him going to his dentist or doctor to have his teeth, throat and sinuses examined for foci of infection.

The classical symptoms of gall stones, recurrent attacks of severe colic, often necessitating hypodermics of morphine for relief, and followed by jaundice, are present in a relatively small percentage of cases of this disease. Oftener we get the picture of a cholecystatis which is now believed to precede the formation of stones. In some cases we have the classical symptoms, or there may be a permanent obstruction of the common duct with marked jaundice. The majority of symptoms of stones are common to them, and cholecystitis, and will be discussed under that head.

There is great variation in the symptoms of cholecystitis. This variation may be influenced by, first, the patient's general condition and his ability to combat infection in any part of the body. Second, the severity of the infection. Third, the stage of the infection, and fourth, the extent of the infection, that is, whether or not the liver or pancreas is involved, and how much. Gall bladder disease is no longer considered an entity, but only a part of a cholangitis involving to a greater or lesser degree all parts of the liver, and is often combined with panereatitis.

In the acute phlegmonous form of cholecystitis we have, first, the signs and symptoms of a severe infection in any part of the body, such as rapid onset, chill, fever, sweat and prostration. In addition to these, we have the special symptoms of nausea, vomiting, severe pain in this region, with marked tenderness and rigidity. There may be a variable degree of jaundice. These symptoms may rapidly become worse, the patient showing signs of developing acute pancreatitis, or a mass may develop in the gall bladder region, meaning an organ distended with pus, with threatened rupture, and demanding immediate surgical intervention, or the symptoms may gradually subside, only to recur or pass into the subacute, and then the chronic form.

In the subacute form we have a picture somewhat resembling the acute, but much milder. There may develop in this form many and confusing symptoms referable to the gastro intestinal tract, due to deformities from adhesions and interference in the proper digestion of food. This form if untreated gradually drags on into the chronic, which is the bone of contention of the various schools as to the proper time and method of treatment. We have in this form the gastro intestinal disturbances seen in the subacute; they are becoming probably milder in form, but more constant. All the patient's symptoms are more or less vague, unless we go very thoroughly into the history of his case. He usually feels draggy, no energy, is constipated, has a swarthy, unhealthy complexion and often complains of aches and pains in distant parts of the body. He is often despondent. In fact, a chronic cholecystitis presents as vague and

various symptoms as any disease with which we come in contact.

We may say the diagnosis of gallbladder disease depends on three things. First, the knowledge of the diagnostician. Second, his willingness to faithfully apply this knowledge, and third, his ability to correctly interpret his findings when this knowledge has been applied. Several new methods have come into use recently in diagnosis and treatment. Among them is the Meltzer-Lyon test. The value of this test is yet to be definitely proven. Experiment has shown that with the Lyon tube in position and with the gallbladder under direct observation during laparotomy when the magnesium sulphate was introduced no contraction of the organ occurred and no bile flowed from it unless it was compressed by hand. The conclusion is that the bile obtained may be from any part of the biliary tract, and any abnormal material obtained may be due to disease anywhere along this tract. (2)

Dr. Willy Meyer considers this test of little value in a diagnostic way. He and his assistants have watched the gallbladder for twenty minutes during operation and after instillation of 25% solution of magnesium sulphate into the duodenum with the tube in place, have not observed the slightest contraction of this organ. (3).

X-ray in diagnosis of gallbladder disease is uncertain at best. A negative finding means nothing, and a positive finding may deceive us, as a gland with a deposit of lime salts will often cast a shadow which makes it impossible to say definitely whether or not there are stones in the gallbladder. However, this does not mean that it should not be routinely used in diagnosing lesions in this region. Some men claim to be able to demonstrate stones in a large percentage of cases. Some state that any gallbladder that casts a shadow is pathological. Many of the best men in the country consider that about ten per cent of the cases of stone can be definitely demonstrated. It may be that further experience and refinement of this method will bring it up to a standard of reliability that will make it one of our best aids in diagnosing these cases. It should be used to eliminate the stomach and duodenum, and to demonstrate deformities due to adhesions. The fluoroscope should always constitute a part of the x-ray examination. As a matter of fact, it no longer makes a great deal of difference whether there are demonstrable stones or not, for we now know other pathological conditions may exist even more serious than stones, that produce similar symptoms and are as definitely surgical.

Laboratory tests, such as the estimation of bile pigments in the blood and urinalysis, blood count, and Wasserman should always be made when indicated and possible. Blood count may be of great value during an acute attack, but not during the quieseent period. The clinical history and physical examination still hold first place in diagnosing lesions of the gallbladder. A carefully detailed history with its proper evaluation, a thorough physical examination with the findings properly interpreted, will often determine the diagnosis against all the laboratory methods at our command.

Treatment of gallbladder disease has long been divided into medical and surgical. With the exception of one procedure, the medical treatment in the definitely diseased gallbladder is today practically narrowed down to more or less symptomatic treatment during acute attacks, preparatory to surgery. This procedure is known as the Meltzer-Lyon method of now surgical drainage of the gallbladdder. Many men are enthusiastic in its use, and unquestionably marked relief is obtained in many cases. The great objection to this method is that we are working in the dark, and there is bound to be a large element of guess work. First, we are never sure gallstones are not present, and of course it will not remove stones. Second, it may allow an operable condition to develop into an inoperable one.

The following data, taken from a reprint from "Annals of Surgery," December, 1921, and gathered by James H. Magoun, Jr., and Kinsley Renshaw, of the Mayo Foundation, merits consideration and should cause us to stop and think very seriously before we advise our patients to go on indefinitely having non-surgical drainage of diseased gallbladders performed, dieting, taking alkalies, cholagogues, and the various proprietary preparations when the constant danger of a malignancy developing cannot be denied.

"Fawcett and Rippman in 592 necropsies in cases of gallstone found malignant conditions of the gallbladder in 48 cases. Dr. W. J. Mayo has stated that cancer occurred in 85 of 3908 operations on the gallbladder and biliary passages in the Mayo clinic. Erdman found the incidence of cancer in this organ to be 6.7 per cent in 224 cases of cholecystitis in which he operated from 1917 to 1919. Deaver found 1.6 per cent malignancies in 1000 operations for gallstones, and Smithies has reported 2.3 per cent malignancies in 1000 operations on the gallbladder. * * * Musser found stones in primary malignancies of this organ in 69 per cent of cases, Futterer in 70 per cent, Winton in 81 per cent, Zenker in 85 per cent, Courvoisier in 91 per

cent, Siegert in 95 per cent, Janowski in 100 per cent, and Deaver in 89 per cent. Beadles found 64 cases of secondary malignancy with stone in two instances. " * * * *" Seven patients on whom a cholecystectomy had been performed were alive six years after operation, a percentage of 8.3 cures."

However, not in a single case was a preoperative diagnosis of malignancy made, the diagnosis being "gallstone" in three, "gallbladder disease" in three, and "gastric carcinoma" in one. I was not able to find one case of five year cure in the literature where the diagnosis had been made before operation.

There has been much written regarding the operation of choice in disease of the gallbladder. Some favor cholecystostomy in nearly all cases, rarely performing cholecystectomy, while others have considered cholecystectomy the operation of choice, performing cholecystostomy only in exceptional cases. The latter school claims a higher percentage of complete cures and a lower percentage of recurrences. According to Deaver, 65 per cent of recurrences can be prevented by cholecystectomy. The consensus of opinion just now seems to favor cholecystectomy. Two reasons may be assigned for the higher percentage of cures reported following cholecystectomy. First, any foreign body in the abdominal cavity tends to stimulate the formation of adhesions, and the drain is a foreign body. Second, cholecystectomy is usually performed in the more favorable cases, while cholecystostomy is done when the outlook is not so good —often a hurried procedure to save a life. Two reasons may also be assigned for there being more secondary operations following cholecystostomy. First, there is probably an infection deep in the walls of the gallbladder which will not clear up. Second, the fact that we still have something to remove. We should probably undertake a secondary operation more readily (conscientiously) if we knew the gallbladder were still there than if we knew it had been previously removed. After a review of much of the literature on this subject, it would seem that there is a definite field for each of these operations. For example, no one would attempt to remove a virulently infected gallbladder held in a mass of adhesions in a patient whose condition is not otherwise good. Cholecystostomy should also be resorted to when there is an associated acute pancreatitis. On the other hand, where we have a gallbladder that is definitely diseased though not in the acute stage and which is easily approached if the patient's condition is good, cholecystectomy is certainly the operation of choice. However, we have the border line cases, and in these we must consider the possibility of an early malignancy in deciding which operation to perform. Personally, I believe when in doubt the gallbladder should be removed. When quickly done there is little or no more shock than in cholecystostomy, and certainly a shorter convalescence.

Following are the opinions of some of the leading men of this country as to the relative value of these two operations. (4).

Dr. Willy Meyer, New York. "For many years I have considered it the only correct stand for the surgeon to take, to remove a diseased gallbladder, with or without stones. This for the reason that the possibility of a recurrence, even after prolonged drainage, is always imminent. In the years gone by, before cholecystectomy entered the field, I personally did a great many cholecystostomies for stone, always taking care that the latter were thoroughly removed, and I have been generally satisfied with the results obtained. However, in one case, the point of drainage at the fundus later became the seat of a carcinoma. This experience prompted me to discard the operation for drainage, except in cases in which the patient's state of health forbade cholecystectomy, or other pathologic conditions in the common duct made the retention of the gallbladder imperative. I certainly should like to emphasize that, to my mind, chronic cholecystitis without stones is far more dangerous than cholecystitis with stones, and demands removal of the bladder in every instance."

Dr. Frederic J. Cotton, Boston, Massachussetts. "It seems to me a good many gallbladders are coming out unnecessarily and I have seen a good many "pathological" gallbladders which when given a decent chance returned to normal and stayed normal, judged by clinical standards. I have also seen a small but distressing group of cases of postoperative obstruction to the flow of bile in which the removal of the gallbladder left a rather difficult mess and unsatisfactory mess to deal with * * * * I am not greatly disturbed over the probability of malignant involvement later in these cases. This does not mean that I hesitate at all to take out a gallbladder that I think will not clear itself and become functional after cleaning out and draining. The operation is ordinarily easy and the added risk trifling."

John B. Deaver. "I make a cholecystectomy in practically all cases, the exception being in the very sick patients with acute empyema, etc."

Donald C. Balfour, speaking of the general plan at the Mayo clinic. "Cholecystectomy is usually the operation of choice and it can be carried out with just as low mortality and better end results than cholecystostomy. Cholecystostomy is definitely indicated in ful-

minating infection in the gallbladder and occasionally in cases in which the patient is in poor condition, obese or if for any reason the operation is very difficult. We follow the general rule that cholecystectomy should be employed unless any condition makes its performance of more risk than a cholecystostomy."

Dr. Willard Bartlett, of St. Louis, Missouri. "There is no possible comparison and never can be one between the two operations mentioned. The removal of the gallbladder is the only operative procedure which ever gives any hope of absolutely curing gallbladder disease, since an inflammation of the gallbladder, according to the newest developments in pathological anatomy, indicates a vicious circle between the gallbladder, liver and pancreas, which can be broken up only by the removal. Drainage is then to be considered only as a palliative measure in case good surgical judgment forbids the more major but curative procedure."

Dr. Stuart McGuire, Richmond, Virginia. "Until six or seven years ago I did cholecystostomy as a rule, and cholecystectomy as an exception, but have now reversed my practice and am pleased with the results. Cholecystectomy is a little more difficult, but in competent hands it is no more dangerous than cholecystostomy. The advantages of cholecystectomy are, quicker and more comfortable convalescence, removal of the danger of recurrence of gallstones, and the elimination of a possible source of future focal infection."

J. Shelton Horsley, Richmond, Virginia. "I feel in most instances where the gallbladder should be operated upon it should be removed. If the exposure is good and the cystic duct is accurately identified, there should be comparatively little danger in this operation. In certain instances, however, where the infection is severe and where there is danger of spreading the infection, or in other cases where the general condition of the patient makes local anesthesia necessary, I believe that a cholecystostomy is desirable."

The technic of operations upon the gallbladder varies with the operator. Five points should be kept in mind. First, good exposure. Second, perfect hemostasis. Third, protection of the abdominal cavity. Fourth, perfect approximation, and fifth, speed consistent with safety to the patient. As much of the operation as possible should be done under local anesthesia in severe cases, and it should be combined with the general anesthetic in all cases. It lessens the amount of anesthetic necessary, lessens the amount of shock, and renders closure of the abdomen easier by relaxing the abdominal walls, which is not a small factor in some cases.

Making a diagnosis and performing an operation by no means complete the case. We should have our patient in the best possible condition before the operation, and should watch him afterward. While we know the cause of gallbladder disease is often to be found tucked away about the root of a tooth or reposing in the crypt of a small, inoffensive looking tonsil, I believe too many of us are too prone to overlook this phase of the case in our treatment, and either neglect the care of these foci of infection entirely, going directly after the gallbladder, or leaving them to be looked after at a later date. This, in my opinion, is a mistake. To my mind the care of these foci should not be a follow up process, but rather a preliminary measure, preparatory to the larger operation. It seems reasonable to assume that by this method our patient should have a better chance of a smooth recovery, less likelihood of a recurrence, and it might even reduce the percentage of post operative pneumonia.

1. (a). While gallstones are seen oftenest in white woman of middle life, neither age, race nor sex guarantees against them.

(b). It is not essential to know there are stones present if it can be established that there is gallbladder disease.

2. Focal infection is the chief source of gallbladder disease.

3. The clinical history and physical examination are most important in diagnosing gallbladder disease.

4. The proper treatment is surgical in the vast majority of cases.

5. The patient should receive careful preoperative and post-operative care.

6. Local anesthetic should be used as much as possible in severe cases, and combined with a general in all cases, reducing the general anesthetic to a minimum.

7. Elimination of foci of infection should be a preoperative procedure.

8. The lack of knowledge of the function or functions of the gallbladder is largely responsible for the difference in opinions as to the best method of treatment of lesions affecting this organ. Until its function or functions are more definitely known, this difference to a great extent is bound to exist.

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A REVIEW OF THE GALLBLADDER ANATOMICALLY AND PHYSIOLOGICALLY.*

By J. D. Northcutt, Covington

The gallbladder and its ducts come from the endodermic membrane by an evagination from the ventral side of the duodenum, and makes its appearance about the third or fourth week of embryonic life. The cephalic portion of this evagination is solid up to about the fourth week, and by some writers it is claimed to have been found solid up to about the eighth week. The caudal portion, which becomes the common duct, becomes pervious first, which is about the third week of embryonic life.

Comparatively few gallbladders are seen in their normal state. Probably more normal gallbladders are palpated. The normal gallbladder in the adult is about four inches in length, and about one inch in width at its largest part. It is conical in shape and lodged in a fossa on the under surface of the right lobe of the liver. It is one of the hollow visci, and its capacity is estimated from thirty to fifty c. c. It is divided into a fundus, body and neck. The fundus is directed downward, forward, outward, and to the right. The body and neck are directed upward, backward, and to the left. Its attachment to the liver is by connective areola tissue and vessels. All of its under and free surface is covered by peritoneum, which is reflected on to it from the liver. Occasionally the entire organ is covered by peritoneum, and in this case its attachment is sort of messentary.

Its anatomical relations are of more importance than its shape, size, etc. The body of the gallbladder is in relation by its upper surface with the liver, by its under surface with the commencement of the transverse colon, and more posteriorly with the upper end of the descending portion of the duodenum, and occasionally with the pylorie end of the stomach. The fundus is in relation in front with the abdominal wall, at or near the ninth costal cartilege, and posteriorly with the arch of the transverse colon. The neck is about one half to three fourths of an inch in length, is curved upon itself, and is that part between the body and the cystie duct, and at its junction with the body of the gallbladder it presents a well marked constriction.

The gallbladder is made up of three coats, a peritoneal coat, a fibro muscular coat, and an inner mucous lining. There is not much difference of opinion about the first coat, but quite a variance of opinion as to the amount of muscular fiber contained in the second coat, and its inner epithelial lining is a field of considerable speculation. Its glands are in some individuals highly developed, and pathologically these glands have been found to contain stones. This inner lining lays in folds which increase in the cystic duct in rather a spiral, circular manner, and they are placed by some anatomists five to twelve in number, and one anatomist says sixteen. This mucous membrane is covered by a columnar epithelium, and secretes an abundance of thick, viscid material known as mucin. This membrane is continuous through the hepatic duct, with the mucous membrane lining the ducts of the liver, and through the lining of the common duct with the mucous membrane of the intestines.

The duct leading from the gallbladder toward the intestinal tract, known as the cystic duct, is the smallest and is about one and one half inches in length. It passes obliquely downward from the neck of the gallbladder, where it joins the hepatic duct, and these two go to make up the common bile duct. It lies in the gastro hepatic omentum and in front of the portal vein, and to the right of the hepatic artery. The crescentic folds beginning in the neck of the gallbladder continue down to the cystic duct in a spiral like manner, the last of them forming the valve of Heister.

The hepatic duct is formed by two trunks, which begin in the liver by the capillary bile ducts, where they are believed to anastomose, one coming from the right and the other from the left lobe, leaving the liver by way of the transverse fissure. They unite and form the hepatic duct, which passes down through the lesser omentum for about one and one half inches where it joints the cystic duct at an acute angle. These ducts lie in close proximity with the hepatic artery and portal vein. The common duct, the largest of the biliary ducts, is about three inches in length, and comes down along the right border of the lesser omentum, behind the first portion of the duodenum, in front of the portal vein and to the right of the hepatic artery. It passes near the head of the pancreas, going for a short distance in company with the panereatic duct, and finally passes in an oblique manner between the muscular and mucous coats of the duodenum, and enters the duodenum about four inches below the pyloric end of the stomach, upon the summit, or papilla. At its entrance into the duodenum there are some musculature of the duodenum. The coats of sphincter of the common duct comes from the circular, muscular bands which guard its outlet and act as a sphincter, called the sphincter of Oddi, or the common duct sphincter. The

*Read before Campbell-Kenton County Medical Society.

the ducts are two in number, an external or fibrous, which has a few feeble muscular fibers, and an internal, or mucous lining, with short epithelial cells. These muscular bands are arranged in a circular manner. The ducts lying in the interlobular spaces have a connective tissue coat and a few muscle cells ararranged in a circular and longitudinal manner.

The blood supply of the gallbladder is not so far removed from the largest blood vessel in the body, coming from the coeliac axis, which is a short vessel only about one half inch in length, which leaves the abdominal aorta just below the diaphragm. This vessel divides into three branches of nearly equal size, the second in size being the hepatic artery, which with its two terminal branches supply the right and left lobe of the liver. These branches are known as the right and left hepatic arteries, and it is from the right hepatic artery that the gallbladder gets its blood supply, through the cystic artery. Occasionally it is supplied by a larger vessel, the gastro duodenalis, which comes from the hepatic artery. One anatomist gives a second branch supplying the gallbladder, which lies deeper and posteriorly. The venous drainage of the gallbladder is carried by three venous vessels into the portal vein, some going directly into the liver substance.

The nerve supply to the gallbladder is from the hepatic plexus and from the sympathetic nervous system. The neck of the gallbladder and the beginning portion of the cystic duct is supplied by nerve filiaments from the eleventh and twelfth dorsal and first lumbar nerves. It is claimed that this accounts for the deep breathing and gagging when making traction upon these parts during operation, and also the diaphragamatic spasms in the gallbladder colic. As to the direct influence of nerves on the secretion of bile and the expulsion of bile, one physiologist says, "We have scarcely any knowledge, scarcely even a guess worth mentioning." (Stuart). (1).

The gallbladder is well supplied with lymphatics, and they anastomose with the lymphatics around the head of the pancreas.

This is briefly an anatomical outline of the gallbladder, its ducts, blood and nerve supply. The mention of anomolies is not because of their curiosity, but because of their importance. A congenital absence of the gallbladder has been found. The gallbladder has been found on the left side, and in this case it contained stones. It is seldom in the same position. Some are longer, some shorter, and some more deeply situated in the liver substance than others. In fact, no two are found to be exactly alike. The right and left hepatic ducts have been found emptying into the gallbladder. Occasionally the cystic duct empties directly into the common duct, the hepatic duct emptying directly into the duodenum. The cystic duct occasionally comes off to one side of the gallbladder instead of its distal end. In the embryonic life these ducts present the appearance of a plexus. In the majority of cases these supernumerary ducts give way to the normal ducts. The irregularity of the duct formation is not so often, and is probably not so important as that of the blood supply of the gallbladder. (2). According to the discovery made by McArthur through the dissecting of thirty seven subjects, the anatomical variations in the blood supply of the gallbladder seem to be the rule instead of the exception. As to the course and origin of the cystic artery, he found the hepatic artery with normal origin passing posteriorly to the bile ducts and giving off the cystic artery to their right fourteen times. He found the hepatic artery passing anteriorly before giving off the cystic artery five times. Three times the cystic artery came off to the left of the bile ducts, and passed posteriorly, and in six cases it came off to the left of the bile ducts and passed in front. These variations were so constant that he classed them as normal. In the remaining nine cases the cystic arteries had such unusual origins, variation in number and peculiarity in their courses that they were all classed as anomolies. Three times the cystic artery arose at the left of the ducts and crossed the bile ducts anteriorly. In one instance there was a double cystic artery. One of these arose at the left and crossed anteriorly from the hepatic branch, and the other artery came off at the right from the hepatic, which had a branch from the superior mesenteric. The points of importance in these variations are, when the arteries pass to the left it brings it farther from the walls of the hepatic artery and there is less danger of injuring it.

In summing up all of these variations, the investigator says that the artery crossed to the left twelve times, passed posteriorly three times, and anteriorly nine times. Only six times did the origin come from the right hepatic artery and pass to the left posteriorly, which is its normal origin and course. In twenty six cases the artery came off to the right. In one instance the common hepatic artery was to the right of the hepatic duct and in close relation with the cystic duct. This would make it difficult to clamp the duct without catching the main blood supply of the liver. (This has been done.) Four times the hepatic came from the superior mesenteric, and the cystic came from the hepatic artery. In one instance the right hepatic came from the aorta and gave off the cystic

artery, and in three instances the cystic artery was double.

It is not for me to comment on the importance of these anomolies here. We will leave that for the surgeon, who has encountered hemorrhage out of place and unexpectedly.

We can give the same reason for these anomolies and why some of the ducts remain and some do not as we can give for the tadpole who loses its tail. We call it nature or evolution, and either answer is equally explanatory.

I shall not undertake to prove or disprove any of the many theories, a few old and many new, as to the function of the gallbladder, but after pondering over some eighteen different theories, about the only thing I have found out for certain is the uncertainty of the whole thing, and yet one cannot avoid having some sort of an opinion, or a choice, in other words, of the various theories advanced. That the gallbladder does contain bile and empties this bile at intervals, and that the character and chemical analysis of gallbladder bile differs from duct and liver bile, there seems to be no dispute. We will only mention a few of the theories. One of the latest is that it absorbs cholesterol from the bile. Some believe that it takes something out of the bile. Some believe that it puts something in the bile. One hypothesis is that the mucosa of the epithelial cells lining the gallbladder secretes a mucus and renders the bile less toxic. This was claimed only a few years ago and thought to be proven, by a method of injecting bile that had been acted upon into the pancreas, and by the injection of bile which had not been acted upon into the pancreas. The latter case gave rise to more active inflammatory processes. This theory was exploded upon the ground that while the bile is not germicidal, it is germistatic, and that the bacteria remaining in the bile solution in the gallbladder over a longer period of time than bile that is taken from the common duct, or duct bile, the bacteria in the gallbladder bile are less active, and also that the trauma produced by the injection of bile into the pancreas must be taken into consideration. The obstruction of the common duct and the re-routing of bile through the duct of Wirsung and finally into the duct of Santorni, producing a pancreatitis, has been disproved, but that the infection crosses over through the closely interwoven relation between the lymphatics of the gallbladder and the lymphatics of the head of the pancreas seems more reasonable, and thus it seems that this theory has been cast away.

The function of the gallbladder as a reservoir of bile is seldom nowdays mentioned. At most it would not hold more than fifteen per cent of the bile secreted in twenty four hours. There is just a little less bile secreted in a given time than there is urine. The theory that the mucus concentrates bile is well established. It has been shown that the precipitation of gallbladder bile is about ten times as great as common duct bile, and the common duct bile is about four times as great as the hepatic bile, and it is claimed that this precipitation of bile is one of the causes of stone formation, which if so could hardly be called a function, but more of an incident.

The storehouse theory, which is producing a flow of bile capable of mixing with the food at the proper time and in the proper way is a beautiful one, and one we are prone to believe at first glance. The amount of bile secreted bears a direct relation to the amount of blood that passes through the portal vein, and the amount of blood passing through the portal vein bears a direct relation to the amount of blood in the stomach, the spleen and the intestines, and this in time bears a definite relation to the amount of food taken, digested and assimilated. This seems more than reasonable, but that the gallbladder contracts at the proper time as the food passes through the duodenum and chyme stimulating the muscular fibers of the gallbladder, causing it to contract and expel bile at the proper time, thus thoroughly mixing bile with the food, also seems reasonable. Then comes the investigator and shows that the gallbladder is never found entirely empty, that its musculature is incapable of contracting with sufficient force to produce these effects and bring about this happy result.

Of course, there is considerable difference between the man who is investigating purely from a scientific standpoint and the investigations of those proving or attempting to prove given theories of their own, assuming at all times, of course, that each is honest.

The theory which to us seems most reasonable is the one that the gallbladder acts to relieve the pressure produced in the common bile duct by an active secreting liver and a tight sphincter of Oddi. That it does relieve the tension and the pressure on the common duct at this particular time seems fairly well established. Just how much this is worth or how much this means to the body economy of the hepatoenteric circulation, no one is quite able to say. But the proof of this particular function can be demonstrated by the fact that when the gallbladder is destroyed or removed, dilatation takes place of the common duct. It is further claimed that animals not having a gallbladder have an enlarged common duct. Animals not having gallbladders seem to suffer no inconvenience on that account. Instances of this may be found in animals of

kindred species and living similar lives, such as the cow, the rat, the dog, the elephant, which have gallbladders, and the deer, the mouse, the pocket gopher, and the rhinoceros, which have not.

Whether the enlargement of this common duct really means harm to the individual who has been deprived of a gallbladder, and whether it would mean harm to one who has never had a gallbladder, it seems reasonable to suppose that such harm is nearly, if not quite nil. In the dilating of the common duct, would not its musculature compensate for this dilatation, the same as any other muscle that is overworked? Would the theory that such muscular compensation under long continued strain break down and fail to compensate, thus losing the elasticity of the duct, mean harm to the individual? This theory seems far fetched and scarcely worth consideration. Would it seem reasonable to suppose that an organ so beautifully designed, so wonderfully constructed, surrounded by and associated with some of the most vital organs be a vestigial organ? Yet we remember when a good percentage of the best men in the country with more or less reason held fast to the theory that the appendix had a hormone function. But today seldom do surgeons open the abdomen and close it, leaving the appendix for the appendix sake alone. We are sure that this will not become true in the case of the gallbladder, but certainly not because of the importance of its function, but because of its difficulty of removal and its less frequency of involvement. But I do not believe that the importance of its functions alone would keep us from treating it as we would an appendix when involved, all things else being equal.

Infection of the gallbladder and its ducts seem to us almost never to be primarily, or unassociated with the surrounding organs. A selective infection does not seem so new, for many years ago Richet pointed out the specific elimination of colon and typhoid bacillus through the liver, and in proof of this, Meyer and Nelson showed that twenty to thirty per cent of typhoid bacillus intervenously injected could be found in the liver from ten to fifteen minutes after the inoculation. It has been fairly well established and generally accepted that certain tissues have a certain affinity for certain bacteria in exactly the same manner that certain drugs act specifically on certain organs of the body. It seems that the flora of bacteria in the gastro intestinal tract which increases in number and in virulence from the teeth to the ilio coecal valve have for their attack in a great majority of cases those tissues springing from the endodermal membrane, similar in construction, similar in physiological action and similar in their manner of manifesting pathology, namely the stomach, liver, gallbladder and appendix. Just recently there was a report of sixty five laparotomies for a duodenal ulcer, and only four appendices found to be normal, and in forty five laparotomies for gastric ulcer only five were found to be normal. I mention this as an argument that we seldom have a single one of the hepatoenteric circulative organs involved.

All of the physiologists I have been able to consult agree, as much as they differ otherwise about the gallbladder, that it is richly supplied with lymphatics, and we know that lymphatics pick up infection very readily and rid themselves of the infection very slowly indeed. Thus the liver seems to be almost primarily infected in cases of gallbladder infection. The portal vein, which drains all the intestinal tract except the lower sigmoid, carries its blood directly into the liver, and Rea Smith of California (3) speaks of the intestinal tract as one of the largest foci of infection in the human body. He claims that the home of the streptococcus is near the ilio coecal valve and cecum. The hepatic cells are nourished by the portal vein. The interlobular spaces are nourished by the hepatic artery, and one writer says that we seldom have an infected gallbladder with healthy liver cells. It would seem more reasonable to assume that an infection might be carried from the gastro intestinal tract from some small focal infection than is being mentioned by the writers of the present time.

The theory that infection might come through the sphincter (4). of Oddi by way of the common duct from the intestinal tract is combated by the fact that the sphincter of Oddi has normally a resistance of six hundred and seventy five millimeters of water, against two hundred millimeters of water, including the secretory pressure of the liver, which is given four hundred and seventy five millimeters water pressure as a safety precaution against infection from the intestinal tract, entering by way of the common duct. It thus has a reserve strength of nearly one third its pressure from within, making this back flow theory rather improbable.

Thus in summing up, I would say,

1. The gallbladder's function has been well established as mechanical, but doubtfully physiological.

2. That its removal produces no symptoms that can be taken as the result of its absence.

3. That its infection is almost never primary.

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THE M. D. DOCTOR.*

By W. A. Bush, Winchester

Whenever you find a doctor who tries to be a leader in everything by straddling the fence in order to ease over on the popular side to get some kind of pull in the community or notoriety, that he is a humdinger in the practice of medicine, instead of proving his ability in the field at the bedside of some sick patient, that bird may be a social and financial success, but he is no doctor (unfortunately, I know personally several of that type). He will not get out of bed at the dead hour of midnight and go to see some sick patient, when he knows there is not a dollar in the case. A real doctor will go because he knows it is his duty, and because he knows there is knowledge in actual experience that cannot be obtained elsewhere. To which class do you belong? Your own conscience will answer for you.

The doctor who has successfully treated some difficult case in some poor family, say in a two room house where two families live, of five or six members each, has accomplished far more, scientifically, than the doctor who treated a hundred such cases in well-to-do homes or hospitals. He has to use both skill and common sense. But the man who treated the hundred cases puffs himself up like a frog on his own wind and croaks statistics, while the other meekly plods along. Now which of the two is the real doctor?

It is not possible for every schoolboy to become president of the United States, nor is it possible for every doctor to become the leading surgeon or internist in some hospital, but it is possible for every doctor to become a real doctor if he has the nerve to learn his duty toward the sick, and the will power to do it.

*Read before the Clark County Medical Society.

Young man, when you begin the practice of medicine, get busy, study your cases, be on the alert for emergencies, cast aside egotism and desire for undeserved notoriety. Success will be yours if you will deliver the goods. Join your County society, associate with your fellow doctors, subscribe to two or three medical journals, and the Kentucky Medical Journal is just as good as any of them, if not better. Occasionally take some post graduate work in order to give yourself a little rest, and also to inspire you with pep and confidence that you know just as much as the big city guy. If you don't know as much, you can learn as much, for he is a man just like yourself, went to the same kind of a school, had the same course of instruction, practiced on human beings like you have, dealt with the same class of cases, caused by the same Bacteria, gave the same kind of medicine, had just as high rate of mortality and possibility higher. If he has outclassed you, it is because he studied to be a real doctor and you didn't.

So there is the case in a nutshell. Take in some kind of amusement to keep from getting stale, baseball, picture shows, golf, music, whatever may be your choice. I prefer my banjo, in order to be close to my work, but this is only a matter of choice. Drop in to see me and I sure will entertain you.

Don't expect to get immensely rich in the practice of medicine. When a young man begins the practice of medicine without a dollar, he has a hard struggle, but by keeping on the job and economizing, after several years, when you reach a ripe old age, and look back at what a great doctor you have been you will have accumulated enough of this world's goods to meet your demands until you sail for the "Golden Shore."

The greatest reward in the practice of medicine is to feel and know that you are second to none in the community in which you are located, that you are competent to handle any case that comes up, and don't have to go to some egotistic pretender for advice, and thereby give him a club to maul you with. Meet him kindly in consultation, but have the patient's interests at heart, and hold his feet to the fire on that point. If he suggests something good and reasonable, use it, and do likewise when you are called to consult with him. Don't try to hammer him, give him rope and he will hang himself. Your entire time will be taken up in honest practice. Be ethical.

Having passed through the evolution in the study and practice of medicine, from the embarrassment of a backwoodsman Rube, the financial strain of going through college, making money during my vacation by teaching

school, graduating without a cent to my name, dead broke and in debt, with only my diploma, a wife and three children, you see I know whereof I speak. I had to make good, and this, my own experience, enables me to paint on paper my ideal of a Real Doctor.

It is a long, hard, rough road, "boys," but the journey is worth taking. The "key" is work and grit.

The best books for the general practitioner to study are Anatomy, Physiology, Pathology, Materia Medical, Practice of Medicine, Obstetrics, and Emergency Surgery. Master them, read others at your leisure time, but these are the foundation, and mighty few puffed-up, so-called specialists can tell you things that are not in these. Keep your "Gray" always handy. If you know your machine, finding defects won't be difficult. Don't overstock yourself with a lot of worthless books, and don't buy on the installment plan. Pay for what you get. Nothing will impair your talent more than being hounded by collectors. Don't listen to the tommyrot stuff some slick agent will try to hand you. He will tell you just what books and drugs you are bound to have, with the indications and method of treatment on the label, and refer you to some noted doctor in another city who is using it with howling success. I don't believe a word of it. Do you? I prefer to select my remedies from standard drugs, and buy books as I need them, and make my own selection.

It seems to me some consideration should be shown the farmer boy in the out-of-town district, whose life ambition is to get into the great work of treating and relieving humanity of their sufferings. He is the one who will go to the rural district where doctors are scarce and needed. Also, I may add that among that number you find the most real doctors, both in professional knowledge and real purpose. The mud-slinging, bandbox, city dude may smile and grin at this rusty-coat, muddy-shoed, tanskinned, country doctor, but I am here to tell you the country doctor, nine times out of ten, has him beat forty ways from Sunday, as far as skill is concerned, and I have many times had opportunities to know, for I have had experience with both kinds. But he has no Literary College diploma, or any Premedic Course. All he has to show his fitness is a first class teacher's or state teacher's certificate, still he is not qualified to study medicine, when all the medical books I ever saw were written in simple, plain English language. Did you ever see one that wasn't? I will bet a new hat that ninety per cent of the Real Doctors today, including College (Medical) Professors, could not pass an examination sufficient to get a teacher's certificate of the lowest class, and it is nothing to the doctor's discredit that he can't. But here comes along a college boy who barely cheated and smuggled his way, who is entitled to study medicine, and would turn up his nose in disgust if a good country location was offered to him. He wants to stay in the city where things are lively, and he can practice surgery or some other specialty, and that is about the best place for him, for he will have less chance in the city to exploit his ignorance, unless some real doctor divides his practice with him, and dumps him on the people in that way, or he is one of those social parasites that gets turned loose on some kind of undeserved notoriety. Don't these two examples show that we have already lowered the "Standard"? But this is the age of experimentation, everybody wants to try something new in everything.

The world is in a state of unrest, and in many ways gone "hog wild." This state of things is shattering the minds of scientists, educators, doctors, and everyone else. Look at the bunch that takes the honor of making and creating man away from God. That bunch may say we have monkey ancestors, but they don't dare discuss who made the sun and stars.

Don't misunderstand me to mean that I object to a boy getting a college education, or all the premedic work possible, I merely take the stand, and can prove it, that all that is absolutely necessary in order to study medicine is a common school education, and any man who can get a teacher's certificate, or pass equivalent examination for same, can interpret any medical literature published in this country, no matter whether he ever saw a high school or college, and that is what we use.

Raising the "Standard" belongs to the college. There is where the test should be. Let them buckle down and deliver the goods by teaching, then put the test to the students year by year. Get the rottenness out of Medical Colleges, have good old experienced teachers like Kelly, Marvin, Evans, and many others, then we will quit hearing all that rotten "junk" about "High Standard" in medical teaching. It is about as successful as nationwide prohibition. The country is flooded with quacks analagous to bootleggers. They fill the country full of adulterated booze. This so-called "High Standard" is causing the country to be full of adulterated quacks pretending to treat every malady all the same way, but they get the "dough" just the same, whether his training is a correspondence course or not, he gets "it" just the same. It does not matter whether he knows "B" from "Beans," he is just as much a doctor in the eyes of the public, and just as

legal in his practice, according to law, as we are, only we are Medicine Doctors and he is not.

Now, what are we going to do about it? Nothing, except a little hot air at Crab Orchard (I will be there) and Medical Societies pass a few resolutions, and that is the end of it.

What is the remedy? Make it easy for them to practice, let them get disgusted with their own selves and farceness. There is nothing about it to learn. They are not our problem to worry about. They furnish little $1.00 shows to few who ought to rest from medical treatment anyway, and when these get sick they call the Medicine Doctor.

What we want is to be raising some real doctors to locate in these out-of-the-way places. That is what we want, and go after this "Rotten High Standard," put out by the A. M. A., clean it out, and then there will be no demand for "Backbone Adjusters," and then you will see these "Country Jakes" making real doctors, and there won't be so many city "knot-heads" hanging around these playthings we call "Clinics." They sure are "jokes", generally speaking. Of course, I admit that there are a few good men connected with most of them, but what in the name of common sense does a doctor think he is if he can't go over his patient and make his own diagnosis. If he can't, then he must burn a little midnight "oil," so he can.

Let me tell you right now, none of your playhouses, called "Clinics", gets a chance to pull one of my patients for fifty or one hundred dollars for examination, when I can do the same thing they do for five to twenty lollars. Then, if I think he needs a specialist, which is not often, unless he needs "Specks," I send him to one.

My idea, Boys, in giving you this "junk" is to advise you to keep your patients home, save their money, so they can be able to pay your bill. These "guys" tell you they have equipment that you can't have. That's "rotten," too. They forget lots of country homes have electric lights, fans, washing machines, and a country doctor can have his Delco outfit and run everything but the x-ray machine, and might be able to do that. He can use his microscope and do all the laboratory tests, just as well as the city "guy." Surgery can be done in the country home just as well as in any hospital. It is just a little more trouble to fix for it, and more expense to the patient, but it can be done. I have performed succesesfully many abdominal operations in country homes before we got our little hospital, and it can be done again if necessary. You can do the same. Just know your "Gray" and go ahead. I have performed appendicitis operations with only a flashlight to see by. I am not mentioning these to boost myself by any means. I have had my experience along that line, and I am not hunting or advertising for surgery, or any other kind of practice. I have enough to get by on, in the few years left for me. This is only a reminder that you don't have to go to, or stay in cities, either large or small, to get good work. So I hope to see some way that a boy with common sense and a common school education can study to be a medicine Doctor.

This is a hint to you city chaps. Get out among these country Rubes, and get busy and show them how to do things.

TYPHOID FEVER THEN AND NOW.*

By Walter Byrne, Sr., Russellville

Just one hundred and twenty years ago, my great grandfather with lancet ready poised rushed to the assault and bled the patient until he fainted. Today, my son leads the assault and the patient is not bled as of yore, but is deluged with billions of defunct microorganisms, and the fainting usually takes place just after the patient gets his bill.

Now do not misunderstand me, my great grandfather did not assault typhoid fever as typhoid fever, for the nice distinction was not then in vogue. His assault was upon "fevers of the Mississippi Valley" and the treatment was the same in all cases. "Bleeding Sar, as much as the patient (or shall I say victim) will bear; followed by free purgation usually in the form of a bolus (a mixture of calomel, rheubarb, scammony, squills and lycopodium mixed well with honey) in size, about a small bantom's egg. If the bolus failed to move the bowels well, in twelve hours follow with a large dose of Rochelle Salts. See that the patient is kept in a sweat, the skin Sar, acts as an aid to the elimination of morbific matters; just as free purgation of the bowels eliminates the poison in the alimentary tract and draws on the surrounding parts for material; just as bloodletting removes the deleterious "materies morbi" of the blood Sar. And harkee Sar, give copious draughts of warm teas, and water warmed by a hot coal from the fire "ad libertum." No Sar, give no cooling drinks; and see here Sar, keep this patient well wrapped and as warm as a toast Sar."

And some of the poor victims did get well. What do you know about that?

Now this is the way fever was treated one century ago. Then the Renaissance set in, somewhere about the middle of the nineteenth

*Read before the Third District Medical Society at Bowling Green.

century, and cooling drinks were administered, and "wonderful to relate" the patients were given ice water baths. From one extreme to other.

Tuphos is a Greek word and means smoke, vapor, hence a cloudiness of mind, folly, or stupor arising from fever; so originally all fevers of this type were called typhus. I believe it was about 1828 that a French physisian, Doctor Bretonneau, began making investigations as to the difference between typhus fever and typhoid fever. Bretonneau called this disease Dothienenterie, from two Greek words dothien, meaning pustule, and the word enteron, meaning intestine. Louis, another Frenchman, in his lectures elaborated the views of Bretonneau.

As far back as in the times of Hippocrates, this type of fever prevailed and was called Tyretus Hemitritaeus. Galen called it Febris Semitertiana. Professor Austin Flint, who, taught in the old University of Louisville, gave it the name of Autumnal Fever in the year 1852.

Do you know that America is entitled to the honor of having, through Gerhard of Philadelphia, first clearly recognized and fully setforth the distinction of these two diseases, typhus fever and typhoid fever? In 1839, Gerhard established for the first time the very important fact that there can exist, and that there does exist, at the same time and in the same country two diseases that maybe clearly distinguished, and in which one can predict during life, the lesions which will be found after death. These diseases are typhoid fever and true typhus fever.

Gerhard had studied with great care the pathology of the disease usually termed in the French Hospitals typhoid fever. In the year 1835, he related a case of typhoid fever associated with ulcerations of Peyer's patches. At that time, he evidently looked upon typhus fever and typhoid fever as the same disease, but in 1836 he had the opportunity of studying an outbreak of true typhus fever in Philadelphia, and in 1837 published an account of this outbreak and clearly established the distinction of the two diseases. He showed that the lesions of Peyer's patches and mesenteric glands, invariably present in typhoid fever, were never seen in typhus fever. He insisted in the marked difference between the petechial eruption of typhus fever and the rose-colored spots of typhoid fever, and he pointed out that, while typhus fever was decidedly contagious, typhoid fever was not often communicable. At that early day, the contagionsness of typhoid fever was denied, and so today we fully agree.

Dr. Austin Flint back in 1848 tells of an endemic of this disease in a little isolated settlement in New York State. "A stranger from New England traveling in a stage-coach which passed through this settlement, had been sick for several days, and arriving at this stopping place was unable to proceed further. He remained at the tavern, and, after a few days, died. He was seen by several physicians of the vicinity, and there can be no doubt that his disease was the same as that with which others were subsequently affected. Up to this time typhoid fever had never been known in that neighborhood. The sick stranger was seen by the members of all the families in immediate proximity to the tavern, with a single exception.

One family named Stearns, having quarrelled with the tavern-keeper, had no intercourse with the family of the latter and very little with the other families, all of whom were tenants of the tavern-keeper. No member of the family of Stearns saw either the sick stranger, or any of those who were taken ill after the stranger's death. Members of the family of the tavern-keeper were the first to become affected; the first case occurring twenty three days after the arrival of the stranger. Other cases speedily occurred in the surrounding families. In a month, more than one half of the population, which numbered forty three, had been affected, and ten had died. Of the families immediately surrounding the tavern, that of Stearns alone escaped; no case occurring in this family.

The occurrence of the disease produced great excitement in the neighborhood; poisoning was suspected, and Stearns was charged with having poisoned a well used in common by all the families except his own. A fact which encouraged this suspicion was, the common well being owned by the tavern-keeper, he had refused permission to use it to Stearns, who had in consequence been obliged to dig a well for his own use. An examination of the water from the common well showed no signs of poison. The disease was undoubtedly typhoid fever.

Visiting this settlement during the prevalence of the disease, and recording the symptoms of several cases then in progress, the clinical history furnished abundant evidence of the nature of the disease. Moreover, Dr. Flint made an autopsy of the body of one of those who had died with the disease, and found the Peyerian patches ulcerated and the mesenterie glands greatly enlarged."

What more proof of the infectiousness of the disease could be had. No attention was paid the excreta and it was dumped into the yard; and of course, the well was in the lowest corner in the yard, inviting all the surface drainage to come and rest in its bosom. Then too the flies had free access, and you

can rest assured, they were "up and doing," and no stone was left unturned to spread the poison.

It was my good fortune in 1878 to listen to the old Doctor tell of this experience with typhoid fever, and of course after listening to his lectures I felt myself armed cap-a-pie and longed to meet it. My longing was speedily gratified, to my sorrow too. For it was my lot to loose my first case, and to this good day, I have never been able to satisfy myself, as to whether I did too much doctoring or too little. But of one thing I am sure, my patient did not lack medicine, he certainly got plenty of that, and as for food in the form of liquids (from four to six quarts) he had enough to kill him, and, he died. Such is the way to immortality.

One author says "facts warrant us in making the statement that while on the one hand typhoid fever cannot be regarded as a strictly contagious disease, on the other hand it is not of spontaneous origin." Where did the first case come from? Venus, Neptune, Jupiter or Mars perhaps supplied us.

I graduated in 1879 and for four or five years we kept on the even tenor of our way, giving cold baths, even ice water baths, and turpentine emulsions and using turpentine stupes and the Lord only knows all the drugs we did use, to abate, and combat the fevers. Every doctor had his favorite remedy or remedies. And all of them continued to lose one case out of every four or five they treated. Why I remember reading an article in a Journal back in the eighties, from a Kentucky doctor, (and I bet he would blush now to the roots of his few hairs if I could read it to him) stating he had a certain cure for typhoid fever. That he had treated over sixty cases up to that time, (he had been in practice about three years) and had never lost a case. Guess what his certain cure was. Calomel and Epsom Salts, small doses of calomel, frequently followed by copious draughts of Epsom Salts. Ye gods! and little fishes! Why was such valuable knowledge hidden under a bushel-measure?

By the way Gentlemen, how many real typhoid fever cases have you treated? I have been think of getting out a querry postal and sending it to every doctor in the Third Congressional District, and finding out just how many cases each doctor has treated in the past twenty years, and how many of his cases died. I remember seeing an article written by a very prominent New York City doctor in the Medical Record, back about 1902 or 1903, advocating a new method of treating typhoid fever, and to my surprise, he said he had only treated some eighty odd cases of typhoid fever in twenty years practice, outside of his cases in the hospitals. He confined his practice to no specialty, but was in general practice; and to think, a New York City doctor, with a large city practice sees eighty odd cases of typhoid fever in twenty years practice. And I know doctors here in the country towns, and adjacent territory, who have treated thousands of cases of typhoid fever in twenty years practice. I know they did, for they told me so.

In 1880, Eberth discovered the Bacillus Typhosus. He was backed by Koch and Meyer; a little later, by Coates and Crooke in England. It was during the Boer War that the typhoid serum was first used as a preventive. You remember what fearful mortality our boys suffered during the Spanish-American War from typhoid fever. Contrast the mortality during the World War with the mortality during the Spanish-American War from typhoid fever, and you are compelled to admit, that the Arts and Science of Medicine have made wonderful advances. But we will still advance and advance, my friends. Surgery is already being called in to assist us, and lives are being saved in cases of perforating ulcers and rupture of the intestines; and it will not be many years before opening the intestines, and treating "the pustules of the intestines" locally, will be as common a treatment for typhoid fever, as the removal of the offending appendix for appendicitis.

How susceptible are we to the infection of typhoid fever? I once had a friend connected with the City Health Board of Memphis, Tenn., in the days before sewers had been constructed there. He told me that part of his force, eight or ten men, were kept constantly at work emptying cess-pools, as there were some fourteen hundred or more then in use. That he never knew of a single case of typhoid fever among these men, covering a period of six years; although during that time, numerous cases of typhoid fever occurred in the city. Now the suction-pump attached to the tank-wagon was used, and the men's hands were necessarily befouled, but no cases occurred. This was back in 1870 to 1876.

Do all races show the same susceptibility to the contagium? The Boston Journal of Chemistry contained an article on this subject back somewhere between 1882 and 1888. It seems that in Shanghai, China the Europeans and Americans have their residences apart from the Chinese. Their section was visited by an endemic of typhoid fever, and all the sewerage from this section flowed into the river just below the commencement of their section, and just above the most theikly populated parts of the Chinese city. This river

is filled with boats and numerous families live in them, and get their water from the river. Now, no cases of typhoid fever occurred among the Chinese. Do you ever have typhoid fever cases among the colored folks in your section? I do not recall a single case.

Now, Gentlemen, from this hodge-podge of talk, we gather that typhoid fever, then was the result of some contagium conveyed into the system, in some way unknown, yet producing dire results; which must be met and overcome. To overcome this poison we resorted to numerous drugs, too many to be named, (time forbids), and we helped some, and to many we gave the "coup de grace"; and we found the expectant treatment the best, with opium in some form our greatest ally.

Today, and now, we know that the little micro-organism, the bacillus typhosus is the little enemy that plays such havoc among our internal organs. We know now beyond doubt that Science has found a deterrent worth while, and if our laity will throw off the shackles of superstitions, and will submit and use "Serum" we will be happy in the Now.

EYE STRAIN AND ITS CAUSES.*

By A. L. Bass, Louisville

Soon after I took up special work, I heard one of the "Chief's" of the clinic at the Hospital remark that, "Refraction is the scientific part of eye work." At the time I thought his statement was a bit far fetched, but long before now I have come to the conclusion that there was a lot of truth in it.

The term "eye strain" is usually used to express an error of refraction and is not functional in the sense of a neurosis, and that the lack of correction or the improper correction, will and does produce at times a most distressing effect upon the extrinsic eye muscles.

The amount of deviation which one eye may have from the other may be so slight as not to be discernible save by special tests. The general belief that a normal appearing eye which can read 20|20 without the accomodation being paralyzed, has let many a poor mortal suffer with symptoms ranging from a mild discomfort to symptoms so severe as to cause them to give up their vocation.

Most of our subjective eyes come from the hyperopic or short eye, which may be further burdened by astigmatism. Such an eye is never at rest during waking hours, and the constant drain, owing to the type and degree of error of refraction, may produce symptoms ranging from a slight nervousness, constant headache, a twitching, a tenderness of the eye muscles, pain in the eye, over the eye, in the temple, back of the neck, nausea, to a complete breakdown.

Fuch states that out of 4800 school children examined, 4% were found to be emmetropic, and the percentage gradually decreased toward the age of twelve, where 7% were found emmetropic.

The myopic eye seldom produces subjective symptoms unless there is mixed astigmatism or myopic astigmatism. Clinical evidence has shown that it is the hyperopic eye, or the hyperopic astigmatic eye, which is particularly prone to cataract and glaucoma. The lack of early and constant correction of the error of refraction causes an uninterrupted strain on the ocular muscles, which predisposes an early sclerosis of the lens and a fibrosis of the filtering mechanism of the eye, hence a cataract or glaucoma. On account of the clinical proof, it behooves us to make an early diagnosis and correction of the error of refraction, as well as rectify other conditions which promote the premature aging of eyes.

The fact that the patient is wearing glasses generally eliminates the eyes in differential diagnosis, regardless of when or the training or skill of the prescriber.

It has been estimated that not more than one fourth of the glasses worn today are fitted and adjusted properly; thus it is not an infrequent experience to see glasses worn which not only do not correct the error of refraction, but make the eyes worse for the wearing, excite faulty muscle action, and bring forth a latent or incipient error, causing pronounced systemic manifestations.

Dr. Lloyd Mills of Los Angeles, says, "The modern scientific examination of the eyes is a matter of mathematical precision combined with a distinct tinge of art. Carelessness, impatience, and hurry have no place in this examination and lead to disaster as well as inadequate training." A thorough opthalmoscopic examination should be made of every eye examined for an error of refraction.

As I have stated, the most frequent cause of eye strain is far sightedness which may be further burdened with astigmatism; to the contrary, not all people with an error manifest symptoms, and some go through life without any trouble. It is surprising to note how many people go through life with one good eye not knowing the other is defective till something happens to the good one and they have to use the other.

As a rule the patients who apply for examination of the eyes for error of refraction, are ones who have to do near work, such as reading, sewing, stenographic, bookkeeping, or studying. Sometimes the retina and the blue iris are very sensitive to bright light, and the use of the tinted lens, with the correction

*Read before the Muldraugh Hill Medical Society.

if there be any, will add materially to the comfort of the patient. We must not forget that the normal eye needs a glass for reading from forty to forty five years of age, on account of presbyopia; and it is the oculist's duty to tell the patients they may expect the need of a change in lens for near, every three to five years from there on till the age of sixty or more years; else they may think they have the glasses to last them the rest of their days, and instead of going back to their oculist, when they need the change for near, they may think he did not give them the proper correction, and will naturally go to another.

An eye that needs a more frequent change in plus lens for near than usual should be examined closely for glaucoma.

Symptoms which usually point to the eye as a causative factor are, in the eye, over the eye, in the temple, or back of the head.

The object of this paper is to make it more impressive the necessity for early recognition of eye symptoms and their proper correction, whereby late surgery, needless suffering, and economic waste may be prevented.

NERVOUS PHENOMENA RELIEVED BY REMOVAL OF SEPTAL SPUR: CASE REPORT.*

By Samuel G. Dabney, Louisville

In June of this year I received a very courteous letter from a young lady in Indiana enclosing an invitation to be present at her graduation exercises at the high school there. She began by saying that perhaps I had entirely forgotten her; that ten years ago her mother brought her to see me because of some nervous phenomena; that she had been having "peculiar attacks" in which she momentarily lost consciousness; that I had performed an operation on her nose at the Norton Infirmary, and that "she had never had one of those spells since." The girl is now eighteen years old; she was eight when the operation was performed.

The mother stated when the patient was brought to me that the girl had been having almost constant discomfort from head colds, nasal obstruction, etc., that she was very nervous and at times had attacks in which she lost consciousness for a moment or two with a little twitching. And she had wondered whether or not an operation to relieve the nasal trouble would have any effect on the nervous status of the child. I told her it was extremely unlikely that nasal treatment would have any effect on the nervous phenomena.

Examination disclosed that the child had a ridge or spur on the nasal septum; this was readily removed under anesthesia and the child was taken home within a week.

The questions are: First, whether these attacks were genuine petite mal, as they seemed to be; and, second, whether the nasal operation cured her, or was their cessation simply a coincidence?

*Clinical report before the Louisville Medico-Chirurgical Society.

DISCUSSION

Garland Sherrill: It is well known among surgeons that epileptiform seizures sometimes cease after the performance of almost any kind of an operation. However, in the course of a year or so the attacks generally recur.

I can conceive that a nasal lesion such as described by Dr. Dabney might be a source of irritation of the fifth nerve and thus cause epileptiform seizures. Such attacks may be due to many things; they do not infrequently occur in children from phimosis; also from intestinal parasites.

I recall a case where typical epileptiform seizures occurred in a young negro who had an abdominal fistula which communicated with the bladder and bowels by four surface openings. He was operated upon in the city hospital, the fistulous tracts being dissected and the rectal and vesical openings closed. The patient was convalescing normally when one day he ingested an inordinate quantity of food; this was followed by evidence of intestinal obstruction and a typical epileptiform attack. He was operated upon for the obstructive symptoms and a cure was finally obtained. He had had no further seizures so far as is known.

Intestinal worms in children frequently cause convulsions; the subject of epileptiform seizures or convulsions from local irritation is imperfectly understood. I believe local irritation in a highly neurotic individual might excite epileptiform seizures perhaps more or less hysterical in type under circumstances such as cited by Dr. Dabney. In such cases relief will often follow the simplest form of surgical operation. In true epilepsy, however, with the reception of the Jacksonian type, my experience with surgical treatment has been disappointing. While Krause claims to have secured some remarkable results from his operative work, I believe the consensus of surgical opinion is that well developed epilepsy will persist during the life of the individual regardless of what may be done in an operative way.

The new drug "luminol"—which has been extolled to the skies by certain observers—may be beneficial in some cases; but whether it will bear the test of time is yet unknown.

W. E. Gardner: Cases such as Dr. Dabney has reported tend to convince us more and more that there is no such thing as epilepsy, per se, as a disease entity. In epileptic attacks it is believed there is always some pathology or reflex irritation, but often no cause can be found.

In young children with mental retardation we see perhaps the most marked type of what has been considered essential epilepsy, where investigation discloses no pathology or source of irritation, to account for the seizures; and I have heard of many such cases where a simple surgical operation was followed by complete relief.

Three years ago a girl of seventeen was sent to Dr. Geo. C. Leachman from the country; she had been having occasional seizures seemingly typical of grand mal epilepsy. Examination revealed marked uterine displacement. She had been a leader in athletic games at school for a year or two and it was thought perhaps the strenuous movements, running, jumping, etc. might have caused the retro-displacement of the uterus. My opinion was asked as to the probable cause of the epileptic attacks and whether not correction of the uterine displacement would relieve them. While I could offer little hope for relief of the seizures from operative intervention—because she seemed to have typical essential epilepsy—I agreed with Dr. Leachman that it might be advisable to correct the uterine displacement anyway and the operation was performed accordingly. The girl made a complete recovery and has had no attacks since. That is the only case of the kind I have ever seen.

The Society of Research in Mental and Nervous Diseases, which meets in New York during December, will discuss the cause of epilepsy, and I am anxiously awaiting to see what will be developed at that meeting. I was informed when in Boston this summer that Stanley Cobb had been investigating the thyroid in the hope of proving that in essential epilepsy there is some disturbance of metabolism so far as the thyroid is concerned. I know nothing of the details of his investigation nor what he expects to report, but am looking forward with much interest to the publication of his findings.

I believe luminal controls the symptoms of epilepsy better than anything known at present, but it is not a cure.

Reaction of Cerebrospinal fluid with Paregoric in General Paresis.—Targowla mixes 5 drops of distilled water, 15 drops of cerebrospinal fluid, and 15 drops of paregoric. In a control tube the cerebrospinal fluid is replaced by distilled water. The total precipitation is noted as three plus, a partial by two plus, and a feeble by one plus. He examined eighty-eight fluids from sixty-five patients with general paresis: eighty-four fluids (sixty-three patients) were positive. In one case the reaction was positive in spite of a negative Wassermann reaction and negative benzoin test. One of the negative results turned positive at a second trial. Three other negative patients were in a state of prolonged remission, with very feeble reactions to other tests.

THE ROENTGEN GASTRO-INTESTINAL SURVEY.*

By C. D. Enfield, Louisville

The x-ray examination has of recent years come to play an increasingly important and decisive part in the diagnosis of most chronic disorders of the gastro-intestinal tract. It is natural that this should be the case, as the positive evidence obtained by this means is, when properly and conservatively interpreted, clear-cut, decisive and convincing. The objection is frequently offered by the gastro-enterologist and the internist that the full burden of gastro-intestinal diagnosis has been thrown upon the x-ray and that this method is neither comprehensive enough nor broad enough to carry it. This is undoubtedly a fair criticism if interpreted to mean that other methods should not be neglected. It will hardly be denied, however, that in the great majority of cases of the class mentioned, the radiological evidence is of more value than any other, and not infrequently of greater value than all the other evidence obtainable.

It is not sufficient to speak of the x-ray examination of the gastro-intestinal tract without qualification or elaboration any more than it suffices to refer to a physical examination." Neither one is an established routine in the hands of all workers and the value of either depends quite as largely upon the thoroughness of its execution as upon the accuracy with which findings are interpreted.

It is a fact notorious among internists and surgeons that a very small percentage of patients complaining of gastric symptoms actually have disease of the stomach. Far more frequently the trouble is found in the gall-bladder, the chest, the circulatory or the urinary systems. While it is presumed that the preliminary history, physical examination and routine laboratory tests made by the physician will have eliminated many or most of the extra-gastro-intestinal conditions before the patient reaches the radiologist, the fact remains that any x-ray examination of the gastro-intestinal tract which omits a routine examination of the chest, gall-bladder and urinary tract, is—in some sense, incomplete.

For many years, largely because of the difficulty or impossibility of obtaining dependable x-ray evidence about the condition of the gall-bladder particularly, and of the chest and urinary tract to a less extent, the ordinary routine of gastro-intestinal examination consisted in the administration of a bismuth meal, the course of which was followed by the fluoroscope through the oesophagus, stomach, small and large bowel. This form of exam-

*Read before the Jefferson County Medical Society.

ination included or did not include—according to the individual leaning of the roentgenologist—one or more plates of the stomach and colon.

With the improvement in mechanism and photographic materials some observers developed a technic based almost entirely upon numerous plates, dispensing for the most part with the fluoroscopic examination. Plates can be made by technicians and interpreted by the radiologist at his convenience. Except for its rather high cost this method is of advantage to the roentgenologist in that it permits him to do a large amount of work through the aid of trained assistants without devoting an excessive amount of time to it himself.

It is evident that the fluoroscopic examination offers certain advantages over a method based entirely upon pictures. On the other hand the pictures are quite indispensible. The fluoroscope permits examination of the oesophagus, stomach, and bowel in action. It permits of palpation with a visible check. It permits the examiner to correlate points of tenderness and masses with the actual organ to which they are in relation rather than with an assumed anatomical position. It has all the advantages of the moving picture over the still picture.

It also suffers from some disadvantages in that it preserves no record of fleeting impressions and offers no opportunity for study of the fine details which may entirely escape the examiner's notice in his intent observation of mass shadows. This is particularly true with obesed patients but applies even in the case of thin individuals. Vision of moving objects and memory of things one has seen in motion are often inaccurate.

The plate examination on the other hand gives no indication of motion nor motility under palpation. It does, however, give the exact silhouette of the organs seen, which may be studied at leisure, and it brings out fine detail in a way of which the fluoroscope is incapable. For the reason, however, that the picture is a silhouette and presents only one projection of outline of the organ a single picture gives information in regard to only a very limited portion of the surface of such an organ as the stomach.

With the gall-bladder the situation is somewhat different in that the fluoroscopic examination is almost invariably quite useless for obtaining direct evidence. Indirect evidence of great value it does give through the effect of pathological conditions in this organ upon the adjacent stomach and duodenum. For the direct examination of the gall bladder, however, not only a picture but many pictures are necessary and these must be made with much refinement in technic and studied with great care in order to obtain the maximum of information. It need scarcely be added that the results of such study must be reported with conservatism.

The gall-bladder both in function, from the standpoint of development, and from the localization of symptoms which follow its derangement, is truly a part of the gastro-intestinal tract and should certainly be included in any examination of that system. A certain small percentage of gall-stones has been demonstrable radiographically for many years. Neither the physician, the surgeon, nor the radiologist attached any significance whatever to negative x-ray findings in the gall bladder region because these were so common even in the presence of obvious gall-bladder disease. Rather recently marked improvements have been made in the technic of the examination of this region and intensive study has brought to light definite diagnostic data previously overlooked. It can safely be said that positive evidence with regard to diseased gall bladders can be obtained by x-ray methods, very, very frequently at the present time. It is perhaps even true that a negative report based upon comprehensive examination not only of the gall-bladder region but of the entire gastro-intestinal tract has come to have a definite significance.

At least a cursory examination of the chest should be included in every gastro-intestinal tract examination on account of the great bearing which chest conditions may have upon gastro-intestinal symptomatology. The oesophagus will be observed fluoroscopically as a routine and it is therefore very little additional trouble for the radiologist to obtain and report information as to the presence or absence of gross changes in the lung tissue, the size and contour of the heart and aorta and the contour and movement of the diaphragm. Fluoroscopic examination of the chest has many limitations and suffices only to give a rough idea of the presence or absence of gross changes.

While the urinary tract is relatively seldom responsible for gastro-intestinal symptomatology a routine examination of this region justifies itself by the occasional discovery of a urinary calculus or other abnormality which unexpectedly accounts for pain supposedly of gastro-intestinal origin. The same film upon which is recorded the evidence with regard to this region gives a general idea of the state of the lumbar spine and sacro-iliac joints, both of which regions may harbor disease capable of simulating gastro-intestinal disorders.

It is of importance to the roentgenologist, and to the physician to whom he is reporting, that his technic be standardized. This means

not only a standardized routine of examination, standard type and concentration of the barium meal and enema, but also a standardized preparation of the patient. Certainly it is not well to disturb the bowel unduly with severe purgatives in preparation for an examination which seeks to discover the true status of the patient's gastro-intestinal tract. On the other hand it is extremely important for the making out of fine detail in the gall-bladder region, as well as to render available the maximum information with regard to the colon, to render that portion of the bowel relatively free from gas and retained fecal material. Compound Licorice Powder of the U. S. P., seems more than most laxatives, to clear the bowel of gas. If this preparation be taken the night before the examination and a cleansing enema of soda and warm water be administered the following morning the bowel will be as a rule as free from gas and fecal content as it can be gotten without undesirable irritation. The soap-suds enema so commonly used is undoubtedly a mistake. It is irritating to the bowel and introduces a state of spasm which entirely upsets the normal contour and movement.

The barium meal employed should be viscid enough to hold the barium in suspension, reasonably palatable to a majority of patients and should contain a sufficient quantity of barium to offer vivid contrasts. If buttermilk or cultured milk is constantly available it is perhaps the most satisfactory of vehicles. If the supply is apt to be irregular or uncertain an equally viscid mixture of malted milk, powdered milk and water may be employed. The enema likewise requires to be thick enough to hold barium in suspension and at the same time thin enough to pass readily through the tube and it must of course be non-irritating to the bowel. A mixture of mucilage of acacia, condensed milk and warm water has proven adequate. To outline in detail the routine which has been found most satisfactory, the patient is first prepared by the method previously detailed. The examination is begun by making a single large film over the Bucky Diaphragm antero-posteriorly, including the entire urinary tract, lumbar spine and sacro-iliac region. This film is immediately developed and examined so that if pathology is noted other and more detailed investigation may be made of the same region before it is obscured by barium shadows. In the event that nothing of importance is discovered upon this film the patient is placed upon another table and five or six small films are made of the gall-bladder region. These are likewise developed at once and examined. The patient's chest is then examined fluoroscopically, the barium mixture is given, and its progress through the oesophagus watched. If this takes more than the usual time a record is made of the number of seconds it takes the mixture to go from the mouth into the stomach. Should this portion of the examination develop any suspicion of organic or functional narrowing of the gullet, or of the presence of diverticulae, a thicker and more viscid mixture of barium is employed to study the oesophagus both by means of the fluoroscope and films. In the event that the oesophagus is normal in contour and function no films are made. The remainder of the barium mixture is then given and the stomach is observed fluoroscopically as regards peristalsis, motility, mobility, tonus and position. The abdomen adjacent to the stomach and overlying the stomach shadow is palpated under the screen to bring out any points of tenderness or tumor masses as well as to determine whether or not the lower portion of the stomach is normally movable. The filling of the first part of the duodenum is especially observed this procedure being assisted by palpation if necessary. During this part of the examination the patient should be rotated partially to the right and left so as to bring into view other portions of the stomach than the greater and lesser curvatures. The course of the second and third parts of the duodenum is observed as the barium passes out of the bulb and any abnormal mobility or fixation of this portion of the bowel is determined by palpation under the fluoroscope.

The patient is then shifted to a horizontal fluoroscope, the examination up to this point having been conducted in the upright position. Upon the table it will be noted whether or not the fundus of the stomach is of normal outline, the first opportunity to make this observation, as previously this portion of the organ will have contained the normal gas bubble which prevents close observation by means of the contrast meal. If the duodenal bulb has not been satisfactorily filled in the upright position a further attempt will be made to fill it in the supine posture. The patient is then turned upon his belly, and the outlines of the stomach are indicated upon the skin as is also that of the duodenal bulb, in order to facilitate centering the tube for the pictures. When, by means of this fluoroscopic examination, sufficient information has been gained as to the character of the stomach and duodenum in action, the current is diverted to a tube above the table and films are made of the stomach and duodenum. Ordinarily, two films are made in the direct antero-posterior position large enough to include the entire stomach, as well as one each in the right and left lateral postures. The tube is then centered over the region of the duodenal bulb and small films are made of this

area alone. Their number will vary according as to whether or not the screen examination has developed a suspicion of pathology in this region. The patient is then dismissed until the 4½ hour period, being cautioned to take no food and to drink only small amounts of water during the interval. At four and one-half hours, the patient is observed fluoroscopically to note whether the stomach has emptied and also to observe whether there is any tendency to obstruction in the small bowel. The position of the head or most advanced portion of the barium meal is noted. The appendix region is observed particularly and the cecum palpated as to tenderness and mobility. A film may or may not be made at this hour according to whether there is any suggestion of abnormality. The patient is then dismissed and allowed to resume his usual habit as to food, drink, etc., and told to return to the laboratory approximately twenty hours later or twenty-four hours after the beginning of the examination. At this time he is again observed fluoroscopically with particular reference to the large bowel, as the meal will ordinarily be entirely out of the small intestine by this time. Screen examination at this time is conducted both in the horizontal and upright positions as the change in posture gives valuable information with regard to the presence or absence of adhesions, ptosis, etc. The appendix is likewise carefully noted and if filled, an effort is made by palpation to determine whether it is freely movable and whether it is tender. The examination is now completed by filling the bowel with a barium enema. This is deemed important for the reason that the twenty-four hour meal seldom fills the bowel completely. The enema is allowed to flow in under very moderation pressure, its flow being watched under the fluoroscopic screen. Palpation is likewise resorted to at this time and aids materially in bringing out evidence of obstruction, adhesions and other abnormalities. A film is routinely made of the colon upon completion of the administration of the enema. If there seems any reason for it this picture may be made stereoscopically. Where abnormality is noted about the appendix region a series of small films may be made over this area alone.

This routine is subject to numerous variations to meet individual conditions. If the first portion of the examination develops a suspicion of obstruction in the small bowel, the patient will be watched at half hour intervals instead of being allowed to go the full four and one-half hours. If it is primarily the large bowel which is under suspicion (from the clinical standpoint) he will probably be observed at twenty-four hours and then again at forty-eight hours before the administration of the enema. If the original examination develops a deformity in outline either of the stomach, duodenum or colon which might conceivably be due to spasm, that part of the examination is repeated a few days later after administering atropin or belladonna to physiological effect. As a further development the large bowel is usually observed fluoroscopically after the patient has made an effort to empty it of the enema. In exceptional cases where colonic stasis seems to be the principal abnormality, examination is continued even beyond the forty-eight hour period and repeated at twenty-four hour intervals for as many days as there remains a residue of barium in the bowel.

The principal objections to this routine are the amount of work involved and through the rather unusually large number of films used. It has seemed to justify itself, however, in the frequent uncovering of lesions which the simpler and more common routine of barium meal examination only, would have overlooked.

No claim is made for originality in developing this routine. It is in use in many laboratories. A description of it is offered chiefly as a commentary on the not infrequent request to "make a picture of the stomach."

PREVENTION OF DISEASE.*

By J. W. Barnhill, Owensboro

"As you well know, the duties and aims of the physician of today are not only to treat and cure disease, but to endeavor to prevent disease and prolong the duration of life. Now that the vital statistics laws furnish exact figures as to the total numbers of deaths with the cause of each, and this can be made the basis of reliable estimates as to the amount of preventable and contagious disease, the importance of an effective administration of the health laws in each county and community can be easily demonstrated. We know that over fifty percent of our sickness and deaths are caused by contagious and preventable diseases, and if these are controlled and stamped out how easily the duration of life can be prolonged from what it is today. The cause of the deadliest disease of the past such as cholera, smallpox, bubonic plague, yellow fever and many others not so epidemic in their nature, such as malaria, typhus, typhoid fever, the cause has been discovered and the means of their spread and transmission made known and many of them stamped out.

*Read to the Daviess County Medical Society.

"Most of our contagious diseases of today are caused by living organisms which may be seen, recognized and measured. The sources of the organisms of human disease are the bodies of diseased human beings. But tetanus, rabies, glanders and anthrax are four human diseases whose germs usually originate in lower animals. The entry of disease germs into the body are wounds, and the natural openings into the cavities of the body, especially the nose and mouth. Disease germs cannot enter the body through healthy skin, but they may enter the flesh and blood wherever epithelial barrier by the prick of a needle or splinter or insect's bill that makes a wound too small to be noticed.

Direct Contact

"The most common and direct method of spreading disease germs from one person to another is by contact with a person who produces these germs. The list of diseases which may be spread through personal contact includes nearly every one which is communicable. The three principal ways in which contact takes place are:

"First—Face to face, or droplet infection, or in other words the secretions blown from the nose and mouth of an affected person upon the face of another.

"Second—Through the hands soiled by excretions of the sick and then handle food and drinks.

"Third—Articles which often carry the germs, as handkerchiefs, dishes, napkins, towels, and bed clothing and common drinking cups in public places often spread these contagious diseases. Almost the only diseases which are spread by impure drinking water are typhoid fever, dysentery, cholera and other forms of intestinal disturbances. The source of disease germs in drinking water is nearly always sewage or the excretions and discharges from human beings who are either sick or are carriers of disease germs. The routes by which typhoid bacilli usually leave the body are the intestine and bladder.

Use Of Vaccines

"We know that disease can be prevented and many lives saved by giving typhoid vaccine. We know that all cases of diphtheria can be cured if given antitoxin at the beginning of the disease and prevented by giving toxine antitoxin. About one-tenth of all deaths are due to tuberculosis, and Kentucky last year headed the list in the number of deaths from this disease of all the states. In the United States last year one hundred and seven thousand died with the disease, and yet it is a curable and preventable disease. There is little comfort in the reduction in the number of cases of smallpox in 1922 when the actual number of deaths increased. The case mortality rate in ninety-two cities was five times what it was in 1921. Okmulgee, Oklahoma, 85 per cent, of the patients died. Muskegon, Michigan, 38 per cent; Tucson, Arizona, 20 per cent; Chicago, 16 per cent; Moberly, Mo., 38 per cent; Denver, 31 per cent; Kansas City, Mo., 46 per cent and Kansas City, Kansas, 42 per cent.

Loss In Philippines

"The loss of 50,000 lives in the Philippines is a recent example of the danger of smallpox to a country that disregards local outbreaks of the disease. We know that if the people would obey the law and be vaccinated, this disease would be no more, yet 50 per cent, and many counties 90 per cent of our people have never been vaccinated. Of our venereal diseases I will only speak of two of them, gonorrhea and syphilis are contagious and preventable. Gonorrhea is the cause of 75 per cent of our blindness and over 50 per cent of the diseases of our women that require surgical operations. The disease is the cause of most cases of sterility by closing either the spermatic tubes in the male or the Fallopian tubes in the female. By putting one drop of a one per cent solution of nitrate of silver into each eye of a baby immediately after its birth has saved many a child from blindness, and since this rule has been in effect we have in the United States five thousand less cases than we had ten years ago. Syphilis is the cause of one-fourth of all cases of insanity and all locomotor ataxia and paresis are late manifestations of uncured venereal disease.

Measures For Control

"The measures for the control of venereal diseases are: (1) Medical; (2) legal; (3) educational (4) social. Cancer is one of the leading causes of death among adults, but is not a contagious disease, but a preventable one, yet in the United States last year it claimed by death 90,000 people, most of whom might have been saved by prompt diagnosis and expert treatment. Relief from cancer must come first from awakening of the public to the dangers of the disease and educating them in regard to the curability of cancer in its early stages and the importance of the surgeon with his knife in the beginning of the disease.

Premature Old Age

"Premature old age is not a contagious disease, but a preventable one. The signs of old age are normal for a person eighty years of age; but they are abnormal for one between forty and sixty. There has been no reduction in the death rate during the second half of adult life. The average age of persons who are over forty years old at the time of death is now less than it was one hundred years ago. A reason that is sometimes given for the increased death rate

among adults is that the work of child hygiene has prolonged the lives of numerous weaklings who are inable to stand the ordinary strains of an active life. The principal cause of the increasing death rate among adults is the prevalence of diseases which begin to show their effects after the middle period of adult life, such as hardness and inelasticity of the arteries, high blood pressure, heart defects, kidney disturbances, intestinal and liver troubles, mental derangements and apoplexy. The causes of premature old age are high living, over-indulgence in alcohol and tobacco, syphilis, a sedentary mode of life, the stresses strains and worries of modern life and intense application to business.

SLOW FORM OF SUICIDE

"It is a slow form of suicide for a person to have no other interest in life than that in a business or profession. Both the mind and the body require daily relief from the continuous routine of a business or a profession. To prevent prematnre old age: First, lead a simple life; second, exercise, and third, recreation. Donald B. MacMillan, the polar explorer, in an interview published in the Christian Register tells us the Eskimos are the happiest, most care-free people in the world. Many children die at birth, the mothers are so hard working, but if a child lives four or five days it will live until it is sixty, for there are no disease in the Far North, no cancer, pneumonia or tuberculosis. What a country; with no disease, and people among whom every day is Sunday; no calendar, no days, weeks or years. Nothing to worry about; no woman even knows her age. Shall we go up and civilize them or will we learn a lesson from them and prolong the duration of life to the age of three score and ten, the time allotted to man during the time of the wise king, and enjoy life as well as when young and say "All's well."

The Electrocoagulation Method of Treating Diseased Tonsils. Frank J. Novak, Jr., Chicago (Journal A. M. A., June 23, 1923), employed this method in 100 cases. Without exception, the patients had a stormy experience beginning a few hours after operation. Pain was uncontrollable save by liberal doses of morphin. There was extreme difficulty in swallowing, much greater than after tonsillectomy. The plate was extremely edematous, and speech was impossible. The intensity of this reaction persisted through the sixth day. Whatever logical basis electrocoagulation of diseased tonsils may have, from a theoretical standpoint, is far overshadowed by the unsatisfactory results in actual practice. Novak believes that the method is entirely inadequate, inaccurate and unsatisfactory, and cannot in any manner compete with the accepted present-day methods of tonsillectomy.

DETACHED GANGRENOUS EPIPLOIC APPENDAGE. CASE REPORT.*

By GUY P. GRIGSBY, Louisville

Ten days ago I was called to see a man who had been suffering with rather severe abdominal pain for three days. He was twenty-four years of age, had always enjoyed good health, and his appearance was that of a normal, healthy individual. He thought the pain was due to something he had eaten and took a large dose of castor oil. The following day his suffering was somewhat less but he remained in bed. The next morning, however, the pain returned and gradually increased in severity.

When I saw him my first impression was that he was not very ill; his temperature was 100 degrees F., pulse 100. Examination of the abdomen showed very marked rigidity of the muscles and indicated some acute visceral lesion. According to the history the point of greatest pain and tenderness was just to the right of the umbilicus, not quite over the typical appendiceal region. For that reason, and the fact that he had not vomited, I did not believe he had appendicitis. I was certain, however, that he had some very acute abdominal lesion because of the pain, tenderness and marked rigidity. So long as he remained quiet and the abdomen was not touched, he said he was fairly comfortable; but the least effort on his part to move in bed, or any attempt to lightly palpate the abdomen, was followed by marked resistence.

The patient was taken to the hospital and celiotomy performed. Examination showed some evidence of beginning peritonitis about the cecal region; the peritoneum was injected and inflamed; the appendix appeared snbacutely inflamed, at least it was distended and contained three rather large fecoliths; the serons coat was injected and it was very much distended with gas. At first I thought this was the sole cause of the trouble, but upon exploring the abdomen more thoroughly and elevating the ileum it was found that the mesentery of the small intestine was folded upon itself, and in separating these folds I came upon a gangrenous body about the size and shape of a large almond. I was then under the impression that I was dealing with a Meckel's diverticulum. The gangrenous body described was easily removed by separating it from the mesentery with the fingers. There was no hemorrhage in the area from which it was removed and no sutures were required. I was at a loss at the time and am still uncertain just what the condition was. Whatever it was it undoubtedly caused the

*Clinical report before the Louisville Medico-Chirurgical Society.

symptoms from which the patient complained.

Since the operation the patient has been entirely free from pain and distress. His temperature has never been above 99 degrees F., and his pulse is about normal. The operation was performed ten days ago and the patient is now practically well. He will be dismissed from the hospital within the next two or three days.

I was first impressed with the fact that the body removed might be a mesenteric gland which through infection or trauma had possibly become thrombotic and had thus been the cause of the symptoms; but after further study I realized it was not between the folds of the mesentery where one would expect to find a mesenteric gland, but the mesentery had simply enfolded itself around the foreign body.

Doubtless all of us have seen epiploic appendages which have become strangulated and detached followed by gangrene and causing symptoms demanding operative intervention; but this did not have the appearance either in size or shape of any epiploic appendage I have ever seen. It was attached to the mesentery of the small intestine. The specimen was sent to Dr. Stuart Graves for examination and he reports that it is composed of connective tissue, no lymphoid tissue being present.

DISCUSSION

Louis Frank: In spite of what Dr. Grigsby has said I think he was dealing with an epiploic appendage which had become detached. It is well known that these epiploic appendages, or corpora aliena as they are sometimes called after they become detached, may give rise to considerable trouble. Quite a number of cases have been reported where patients have been operated upon under the diagnosis of appendicitis and other lesions and the trouble found to be detached and gangrenous epiploic appendages. I had occasion to operate upon such a case some time ago and at that time the literature was thoroughly investigated. In my case an epiploic appendage was found almost attached, barely hanging by a thread, it was gangrenous and had given rise to acute infection.

In the case reported by Dr. Grigsby, the foreign body being entirely outside of the mesenteric structure, it could be nothing else than a detached epiploic appendage, which had become infected and gangrene ensued. The body could not have been an infected mesenteric gland for the reasons he has stated.

Guy P. Grigsby (closing): I have seen three or four cases of strangulated epiploica but they did not have the appearance of the specimen removed in the case I have reported. The location of the foreign body was rather peculiar, it was on the right side near the transverse colon. It is possible that it may have been detached from the colon and was simply agglutinated to the mesentery of the small intestine about four inches from the cecum. It was unlike any epiploic appendage that I have ever seen. I agree with Dr. Frank, however, that it could be nothing else but a detached epiploic appendage. All the inflammatory action was around this localized area. Possibly the body became detached at the time the patient first complained of severe abdominal pain and when I saw him the condition was secondary.

THE CEREBRO-SPINAL FLUID AND ITS RELATION TO THE DIAGNOSIS AND TREATMENT OF NEURO-SYPHILIS.*

By Cuthbert Thompson, Louisville

The cerebro-spinal fluid is contained in a closed sac, the sub-arachnoid space, which has a capacity of from 125 to 150 cc. Outside of this closed sac is the dura, and as its walls are composed of dense white fibrous connective tissue, they are practically indistensible; hence there is a little or no variation in size of the space, or in the amount of the fluid.

Sources Of The Fluid

The choroid plexuses of the cerebal ventricles are generally considered as the chief source of the cerebro-spinal fluid. A small quantity is produced in the substance of the brain and cord and is conveyed into the subarachnoid space by the perivascular channels, and a still smaller quantity is produced by the ependyma (that is the epidermal cells lining the neural tube.)

The cerebro-spinal fluid thus formed by the choroid plexuses in the cerebral ventricles passes into the third ventricle through the Y-shaped foramen of Monro, thence by the aqueduct of Sylvius to the fourth ventricle, and from here it passes into the subarachnoid space principally through the foramen of magendi at the posterior end of the fourth ventricle the cistuna magna. The fluid is then distributed into the spinal subarachnoid space and around the base of the brain, and upward over the hemispheres.

The arachnoid membrane is practically impermeable to the fluid, but it has power of absorption or diffusion of certain elements of the fluid from which it derives its nutrition.

In the subarachnoid space the cerebro-spinal fluid receives a small addition to its

*Read before the Louisville Medico-Chirurgical Society, April 27, 1923.

bulk from the peri-neural and peri-vascular channels. This fluid is really part of the drainage of the nervous system. Thus there is a difference between the ventricular fluid elaborated by the choroid plexus and the subarachnoid fluid which is composed of the ventricular fluid and the drainage fluid from the peri-vascular channels. The ventricular fluid contains more dextrose and less protein than the subarachnoid.

Absorption Of Cerebro-Spinal Fluid

The general consensus of opinion is that the chief channel of returning it to the blood stream is through the arachnoid villi into the cerebral sinuses, especially the superior longitudinal sinus. There is, however, a subsidiary system of drainage through the lymph system.

Although the lymphatic vessels do not penetrate the membranes of the central nervous system still there is an indirect connection, as outside the dural cuff which surrounds each nerve on the distal side of each root ganglion there are lymphatic vessels which can take up any of the cerebro-spinal fluid which may pass through this thin dural membrane. This indirect connection of the lymphatic system and the cerebro-spinal canal may be a possible pathway for infections to spread backward along the peri-neural space of a cranial nerve, specially the olfactory.

The rate of production and absorption of the fluid is an active one. Dandy and Blackfan have estimated that is completely absorbed and renewed at least every six hours; they also state that absorption takes place directly into the blood and this from the entire subarachnoid space. This would resemble the process of absorption in the pleural and peritoneal cavities.

Barbat has shown in a number of cases, where an intravenous injection of neosalvarsan was given and a lumbar puncture was done immediately, it was possible after twenty-four hours to demonstrate arsenic in the spinal fluid in over 80 per cent of the cases. We also know that alcohol, urotropine and sodium salicylate given by the mouth are excreted in the cerebro-spinal fluid.

Blackfan has shown that if phenosulphothalein is introduced into the sub-araehnoid space of a dog, 60 to 90 per cent of it could be recovered from the urine; and in the human subject it appeared in the urine 12 minutes after its introduction into the ventricles and 8 minutes after its introduction into the spinal subarachnoid space.

There is a similarity between the production and absorption of the cerebro-spinal fluid and the intra-ocular fluids. The main source of the aqueous fluid of the eye is the ciliary body and processes.

The fluid passes into the anterior chamber to the angle, from which it passes into the blood stream. The pectinate ligament has in it the "pectinate villi" in structure and function like the arachnoid villi. The waste products of the retinal neurones pass by perineuronal spaces into the aqueous reservoir similarly to that which occurs in the central nervous system.

Steward arrives at the following conclusions concerning the secretion, absorption and functions of the cerebro-spinal fluid:

(1). On the whole there is almost complete unanimity of opinion that the choroid plexuses are the chief source of the cerebro-spinal fluid. This conception rests not on any single conclusive piece of evidence, but on well-established data derived from histological, pharmacological, and pathological observation. (2). The question whether the cerebro-spinal fluid is a true secretion or a dialysate cannot as yet be fully answered. (3). The possibility of subsidiary sources of supply, either by drainage from the peri-vascular spaces or from the membraneous surfaces of the brain, must be considered. (4). Conclusive proof that the cerebro-spinal fluid functions as the lymph of the brain is at present lacking. (5). Thus far the methods devised for computing the rates of formation and absorption are unreliable. (6). Absorption of cerebro-spinal fluid takes place by a process of diffusion through microscopic arachnoid villi into the large dural sinuses and, to a lesser extent, through the lymph sheaths of the cranial nerves. In this spinal subarachnoid space the fluid is drained by way of the lymphatic system only. (7). Cerebro-spinal fluid circulates in the ventricles of the brain and in the subarachnoid space surrounding it. Whether it also circulates in the substance of the brain remains to be established. Movements of the fluid in the spinal subarachnoid space are probably minimal in degree.

The cerebro-spinal fluid resembles blood plasma and lymph in its inorganic constituents, but differs from them in its low specific gravity and in the absence of albumin and fibrinogen.

The physical characters of the fluid are sufficient to distinguish it as a true secretion and to differentiate it from a simple exudate (Mott). In health it contains no cells, no opsonins, no antitoxins, no alexins, which are present in blood plasma, lymph, and most serous fluids. This explains the great liability to septic meningitis, after injuries to, or operations on, the central nervous system.

Examination Of The Fluid

The following examination of the fluid enables us to tell when it is abnormal, and

gives us important information as to the cause of the abnormality.

1. Physical characteristics and naked eye appearance.
2. Chemical.
3. Histological.
4. Bacteriological.
5. Biological.

Physical. The specific gravity is 1008 to 1013. The pressure of the spinal fluid and the blood pressure are correlated; the pressure of the spinal fluid in health is about 100 to 150 m. m. of water (5 to 7 m. m. of mercury) while the patient is lying on the side. We get an increase in cases of brain tumor with choked disc sometimes as high as 400 m. m. of water; on the other hand, in long standing degenerated cord diseases we usually find a low pressure, sometimes zero.

Color. Any variation from the water clear is abnormal. The fluid may be opalescent from suspended bacteria; it may be pink, yellow or yellowish green due to the presence of altered blood pigment or to bacterial growth.

Clotting. This may occur due to high proteid content which is highly characteristic of meningitis. In compression of the cord from any cause where the fluid below is completely shut off from that above, transudates of albuminous substances occur which clot very rapidly. The filmy clot which forms after the fluid has stood a few hours is characteristic of tubercular meningitis.

Proteid. A very small amount is found in normal cerebro-spinal fluid, (about .02 to .05 per cent) a small increase in the chronic inflammations, a rather larger quantity in tabes and tuberculosis, and much more in acute meningitis, brain tumor, cerebral thromboses and cerebral hemorrhage.

Sugar. This is a normal constituent of the fluid (about .06 to .09 per cent). It is either completely absent or very greatly reduced in meningitis.

Cytology. Normally there should be no cells found in the fluid, but a few mononuclear cells are not considered abnormal; some consider under 5 per c. mm., normal, between 5 and 9 doubtful, and 10 or over definite pleocytosis. Lymphocytes, denoting chronic inflammation and acute poliomyelitis, and the polynuclear leucocytes denoting acute inflammation, are always abnormal. The organisms most frequently found in the fluid are the meningococcus, streptococcus, staphylococcus; more rarely the pneumococcus, B. typhosus, B. influenza, B. tuberculosis.

Wassermann Reaction. A positive reaction usually means that the patient has now or has had on some former occasion cerebro-spinal syphilis; a negative Wassermann is not so conclusive. Wassermann reactions should not be absolutely accepted as proving or disproving the presence of syphilis, but are valuable confirmatory evidence when they agree with the clinical findings.

The paretic curve obtained by the gold reaction is of diagnostic importance, and when once this curve is reached it never changes again. The syphilitic and meningitic curve obtained in the same way are of less importance.

I have referred to these facts concerning the cerebro-spinal fluid, as valuable aid is obtained by examination of the fluid in the diagnosis and treatment of neurosyphilis. Examination of the fluid has shown that the meninges (interstitial syphilis) are affected in early syphilis almost as frequently as the skin and mucous membranes, although there may be no clinical evidence of meningeal involvement. The same is true in parenchymatous syphilis, as regards changes in the fluid which often occur long before clinical symptoms are recognizable.

Diagnosis Of Neurosyphilis

The clinical examination consists in:

1. Examination of the reflexes, pupils, knee jerks, etc.
2. Sensory functions, touch, pressure, pain etc.
3. Co-ordination.
4. Functions of the cranial nerves.
5. Changes in the mental functions.

These will not be considered further, as I wish to refer only to the laboratory tests of the cerebro-spinal fluid, and the relation of these changes to the diagnosis and treatment of neurosyphilis.

A diagnosis of neurosyphilis should be based on neurological and laboratory findings. When these agree the diagnosis is easy, but on laboratory findings we should never make a diagnosis, contrary to the clinical evidence. This is especially true in cases with a negative Wassermann, as we may find a normal cerebro-spinal fluid in cases of syphilitic vascular diseases of the brain, in non-progressive cases of tabes, and in other spinal cord degenerations of undoubted syphilitic origin.

Lumbar puncture and examination of the spinal fluid should be made in all cases of syphilis at the end of the first year of treatment, or earlier if there is any evidence of neurosyphilis. If we get positive laboratory findings in the fluid, with no clinical evidence of neuro-syphilis, we should make another thorough search for symptoms which may have been overlooked, either because they were very mild or because they were transient, as it is of the utmost importance that we should make a diagnosis, especially a positive one, as soon as possible.

Keidel and Moore differentiate into four groups, the types of spinal fluid found in patients with syphilis.

1. Cases with normal fluid, the majority of which remain free from clinical or serological evidence of neurosyphilis.

2. Cases with pleocytosis, increased globulin and negative Wassermann reaction. These are supposed to be general syphilis with meningeal irritation without tissue invasion.

3. Cases with further increase of globulin and pleocytosis up to 50 cells, negative Wassermann with a small amount of fluid, and a faint positive with a larger quantity.

4. Number of cells over 50, Wassermann positive with .2 c. c. m. of fluid, and the gold test of the "paretic" type.

Sicard believes that during the development of neurosyphilis the pathological changes in the spinal fluid occur in the following order. Albumin, globulin, increase in the cellular elements, positive Wassermann, while under treatment they subside in the reverse order, so that we may find increased cellular and globulin content with a negative Wassermann reaction.

Frequency

It is difficult to estimate the number of syphilities who develop neurosyphilis. Mott and Barnes believe that the modern treatment is very little better in preventing neurosyphilis than the old mercurial inunctions and injections combined with potassium iodide. It has been estimated that about 50 per cent of untreated syphilitics develop pathoolgical changes in the cerebro-spinal fluid, coincident with the positive blood Wassermann. However, in many cases these changes in the spinal fluid, occurring shortly after infection, are only transient, and may later disappear without leaving any organic involvement of the nervous system.

Of those infected patients who were carefully treated, about 20 per cent showed similar changes. These early changes in the fluid are probably due to a meningeal reaction to the virus, and not an infection of the nervous system.

The spinal fluid was examined in over 1300 consecutive cases of syphilis at the Haslar Hospital to determine what changes had taken place in untreated cases. 10% showed a doubtful pleocytosis (5 to 9 cells.) 18% showed a positive pleocytosis (over 10 cells), making a total of 28% having an increased cell count. 27% had a positive spinal fluid Wassermann reaction.

It is estimated that over 10 per cent of patients infected with syphilis, and treated by mercury die of neurosyphilis.

Concerning the modern intensive treatment Mott says: we have yet to learn whether salvarsan treatment will reduce the number of cases of tabes and general paralysis; there is a feeling on the part of a good many neurologists that the modern treatment by arsenobenzol compounds presents no greater advantage in the treatment of neurosyphilis over that obtained by systematic treatment by mercurial inunction and intramuscular injections of mercury combined with iodid of potassium.

Two explanations have been offered as to why some syphilitic patients who have been energetically treated develop neurosyphilis while others do not. The most probable one is that in some cases the nervous system has for some reason or other (probably a hereditary one) a lessened resistance. The other explanation is that there is a special strain of spirochaete which has an especial affinity for the nervous system. Most authorities now believe it is the soil rather that the seed which causes the late degeneration of the nervous system.

The high percentage of meningeal reactions in syphilis has led neurologists in recent years to believe that neurosyphilis is on the increase. Fordyce thinks this is more apparent than real, and explains that our more accurate knowledge of the disease, together with our more systematic examination of the spinal fluid, has led us to a positive diagnosis in cases which were formerly overlooked.

Recently another explanation has been suggested: For years after the introduction of the salvarsan treatment, the older drugs, mercury and iodide of potassium, were practically discarded, and it is in many of these cases that the late nervous symptoms are now found.

Fraser and Duncan not only consider that the alleged increased incidence and earlier onset of neurosyphilis is real, but is due to the modern arsenical treatment. In support of this contention they mention that neurosyphilis, which was previously unknown among the natives of South Africa, has appeared among them since salvarsan treatment has been used. They have also observed cases of tabes which occurred as early as 2 to 18 months after infection.

These observers believe that the intensive arsenical treatment destroys the spirochaetes in the somatic system but not those in the nervous system, and that the later flourish owing to deficiency in the supply of antibodies (due to destruction of the spirochaetes in the somatic system,) the central nervous system being capable of little or no antibody formation, and depending on the general system for its supply of these.

Dreyfus believes no case of syphilis can be properly controled or treated without the information supplied by repeated lumbar

puncture. He gives the results of ten years' study of the behavior of the cerebro-spinal fluid in syphilis. The problems to be solved are: (1) the behavior of the cerebro-spinal fluid in the different stages of syphilis, especially of the nervous system; (2) to what extent these changes affect prognosis and treatment; (3) the effect of treatment on the fluid; (4) the relationship between pathological changes in the fluid and the clinical signs of neurosyphilis; (5) the relative value of the different reactions in the fluid; (6) the times and indications for examination of the fluid; (7) the question whether the condition of the fluid is the decisive factor in prognosis or treatment, or only one of the symptoms.

Dreyfus' material comprised 1,067 cases of syphilis at various stages. In these, 3,000 lumbar punctures were performed. A normal cerebro-spinal fluid was regarded as one with a pressure of 150-180, a cell count of not more than 5 cells per cubic m. m., and negative Wassermann, globulin, and gold tests.

In primary and secondary syphilis with no nervous symptoms, pathological changes in the fluid were found in 80 per cent. In the earliest stages these consisted only in increased pressure; in later stages lymphocytosis and increase in albumin; still later, a positive Wassermann reaction. In these cases the pathological changes generally disappear under proper treatment if there are no nervous symptoms. The first course should, however, be followed by a second, third, and fourth, with intervals of six weeks, in order to prevent relapses in the fluid. If the latter is normal 8 to 12 months after such treatment, nervous syphilis is improbable.

In latent syphilis with no nervous symptoms, changes in the fluid were found only in 19 per cent. of the cases. This low percentage, in cases which had been mostly imperfectly treated, shows a tendency to spontaneous cure, which is supported by the clinical evidence. A cerebro-spinal fluid which was normal in the latent stages was never found to become pathological in later years. The serum reaction, however, in this group was positive in 65 per cent. Occasionally the blood was negative and the cerebro-spinal fluid pathological.

In early cerebral syphilis pronounced changes were usually found in the fluid, with a cell count of 100 to 1,000 and positive Wassermann and gold reactions. The blood was often negative with a positive cerebro-spinal fluid in cases treated with salvarsan. The cerebro-spinal fluid generally improved with the clinical symptoms after the first course of treatment, but usually relapsed long before recurrence of symptoms. It was found that from four to six full courses of salvarsan at intervals of six to eight weeks were necessary to render the fluid persistently negative. If the fluid is normal 9 to 12 months after the fourth course, recurrence is not probable.

In cerebro-spinal syphilis the cerebro-spinal fluid was seldom normal in the case of active disease, and a positive fluid in all cases probably indicates an active process, even when there are no clinical signs. A negative fluid, on the other hand, probably indicates a healed process. This signifies that all cases with a positive cerebro-spinal fluid and a history pointing to cerebro-spinal syphilis should be energetically treated, whether clinical symptoms are present or not. Four courses of salvarsan at intervals of not more than three months are generally required to render the fluid negative.

In tabes the relationship of the changes in the fluid to the clinical signs is especially complicated. Changes in the fluid were found in 79 per cent. of the cases. The Wassermann reaction in the blood was positive in 84 per cent. of the fluid positive cases, and in 30 per cent. of the fluid negative cases; hence Dreyfus regards the Wassermann reaction as of less value in tabes than in any other form of neurosyphilis. He recommends treatment with salvarsan both in cases with positive and negative fluids. In 14 cases which were under observation for 7 years a negative fluid and arrest of the symptoms were obtained after 1 to 10 courses of treatment.

Treatment should be continued for several years, long after the fluid has become negative, three courses in the first year and two in subsequent years. Degenerative processes, resulting in ataxia and optic atrophy, are not influenced, but the crisis, pains, bladder symptoms, and perforating ulcer may be relieved. Dreyfus makes no mention of intraspinal treatment.

Treatment

It is to be regretted that after the introduction of the salvarsan treatment many physicians for a time discarded the older remedies. My idea is that this neglect of mecurial treatment is the principal cause of the increase of neurosyphilis which is seen at present.

The present method of a combination of mercury iodides, and salvarsan treatment not only is applicable to syphilis in general, but also to neurosyphilis, especially when the salvarsan is given in small frequently repeated doses, as we in this way prevent any acute arsenical poisioning, and are less likely to get neuro relapses. The gummatous and meningo-vascular (interstitial) types of neurosyphilis usually respond very well to this treatment.

The problem of treatment of the parenchymatous type is much more difficult. It is very resistant to all kinds of treatment whether oral, intramuscular, or intravenous. The most that can be hoped for is to arrest further degeneration, and frequently we even fail in this.

Two of the more recent plans of treatment suggested to help us in these almost hopeless cases, are the intra-thecal and the vaccine methods. The last one, although it does not come within the limit of our discussion, I will briefly refer to, viz. the Von Jauregg method of treatment of general paresis.

In the past, cases of this disease have been reported as cured when the patient happened to be infected by an intercurrent disease, with continued fever or suppuration, as in every sipelas, pneumonia, etc. In 1917 Von Jauregg innoculated cases with benign tertian malaria, with 3 out of 9 cases of paralytic dementia reported cured. Since 1919 he has used the following method as a routine. From one to 4 c. m. of blood are taken from a previously inoculated general paralytic between two attacks, who has not been treated with quinine; this is immediately injected subcutaneously into the patient to be treated. Typical attacks of benign tertian malarial fever appear after an incubation period varying from six to thirty-six days. The patient is allowed to have from nine to twelve of these attacks untreated, and then quinine is administered; improvement begins gradually after the malarial attacks have ceased, and in about 50 per cent of the cases remissions have occurred. It is significant, however, that the Wassermann reaction of the blood and spinal fluid is not modified by this treatment.

The other special method is the introduction of drugs into the ventricles or into the cranial or spinal subarachnoid space.

Intracranial: Drugs have been introduced into the cranial subarachnoid space through the orbit, and into the cisterna magna through the ocupito-atlantoid ligament, and into the ventricles of the brain through a trephine opening and perforation of the corpus callosum, but the results of these treatments even in the hands of experts hardly justify their use, as they are attended with great risks.

Intraspinal: Browning and Mackenzie, of Glasgow, in 1909 suggested the intraspinal injection of an autogenous salvarsanized serum for the treatment of general paralysis. This was done in 1911. Later Swift and Ellis used the same method in cases of tabes dorsalis. Ravaut a little later injected minute doses of neosalvarsan directly into the cerebro-spinal fluid. Other modifications have since been used. Byrnes added perchloride of mercury in vitrio to the patient's serum. Oglivie added salvarsan, and still others added both mercury and neosalvarsan.

Closely associated with the intraspinal method is spinal drainage. Sometimes this is employed in connection with intravenous medication, and is always done just before the intraspinal injections. By its use we hope to carry off some of the toxins from the fluid, to produce a lower pressure in the fluid, thus causing a fresh supply of fluid to be secreted, and producing a hyperemia of membranes, which may allow substances to pass through them which would be toxic to the spirochaetes.

Keidel and Moore consider that the mode of action of intraspinal medication does not depend on the increased permeability of the meninges. They hold that parenchymatous neurosyphilis is always associated with syphilis of the meninges; that in a large proportion of cases meningitis is the principal factor, and that in these cases (early tabes and cerebro-spinal syphilis)—the greatest benefit is derived from intraspinal treatment.

Considerable difference of opinion has arisen amongst neurologists with regard to the usefulness of intraspinal therapy in neurosyphilis. Strauss condems the intraspinal method because: 1. The amount of arsenic present in auto-salvarsanized serum is infitesimal and of no spirochaeticidal value.

2. There is no proof that salvarsanized serum is spirochaeticidal in vivo.

3. It is impossible to reinforce blood serum with more than an infinitesimal amount of salvarsan.

4. The direct introduction of any arsenical compound into the cerebro-spinal fluid is dangerous and if non-toxic is impotent.

5. The pathological changes in neurosyphilis are rarely only superficial and are not reached by injection into the subarachnoid space.

6. The method is physiologically wrong, as we showed in the earlier part of this paper that substances introduced into the cerebrospinal fluid are rapidly transferred into the blood stream, and are only to a small extent diffused through the subarachnoid space, the fluid acting as an avenue of excretion, not for nutrition of the cerebro-spinal tissues.

7. Arsenic injected intravenously reaches the cerebro-spinal fluid in greater quantities than can be safely injected intraspinally.

The general consensus of opinion seems to be that all early cases of neurosyphilis should be treated intensively with intravenous and intramuscular injections, accompanied by inunctions, and that intraspinous medication should be used only when all other methods fail.

Clausen and Jeans state that the amount of arsenic in the cerebro-spinal fluid is as great after intravenous injection as after intraspinal injections of arsphenamine-serum by the Swift-Ellis method, in cerebro-spinal syphilis.

Schaller advises intraspinal treatment in cases of tabes which have resisted all other methods of intensive treatment, but he states that no case of neurosyphilis without reactions in the spinal fluid is benefited by the intraspinal treatment.

In the London Lock Hospital the following routine is followed: On the first day on which the patient was seen, and a clinical diagnosis of nervous syphilis either made or suspected, the cerebro-spinal fluid was examined so as to correlate the pathological findings with what was noted on ordinary clinical examination. A week later the patient was given a maximum intravenous injection of one of the salvarsan substitutes, and, after a further interval of one week, the injection was repeated and immediately followed by drainage of the theeal canal. The method of alternate weekly injections and injections plus drainage was continued until the patient had received eight injections and four tappings. In addition most patients received one or more intramuscular injections of injection to intensify the action of the salvarsan substitutes, and to ward off metallic intoxication. The patient was then given a potassium iodide mixture (with mercury as well if the case was "meningeal"), and the course repeated in two or three months time if he felt no better, or if the symptoms returned. Provided that a suitable interval had elapsed since the termination of the last course, it was found that the patient's symptoms were the best indication as to when it was advisable to begin another.

When a patient is admitted to the National Hospital, Queen Square, London, his cerebrospinal fluid and blood are taken for examination. He then starts on a course of iodide, mercury, and generally intravenous novarsenobenzol. Iodide is started in 10 grain doses and increased slowly to 25 or 30 grains thrice daily. The mercury is given by inunction, 1 drachm of unguentum hydrargyrum daily. With regard to the novarsenobenzol, they begin with very small doses, usually 0.15 gram, and increase through strengths of .03 and 0.45 to 0.6 gram, which is the maximum they now give. For occasional cases they give intratheeal injections either of mercurialized serum or of patient's own serum, prepared after two or three doses of novarsenobenzol.

Dercum believes that the beneficial effects of intraspinal treatment are due solely to spinal drainage, and not to the action of the salvarsanized serum injected. He looks upon the cerebro-spinal fluid as having a purely mechanical function—(the hydraulic suspension of the brain and cord) and denies that it plays any part in the nutrition of these organs. He states that drugs introduced intraspinally rapidly pass by way of the arachnoid villi and lymph spaces into the general circulation and do not penetrate the nervous parenchyma. Dercum has had considerable experience with the Swift-Ellis method of intraspinal medication by salvarsanized serum and can confirm the beneficial results obtained by this method in cerebro-spinal syphilis and tabes, and to a lesser extent in general paralysis, but he claims to have obtained equally good results by simple drainage of the cerebro-spinal fluid by lumbar puncture performed at the same time as intravenous injection of arsenobenzol. Further, he states that even better results were obtained in cases of tabes by drainage only, performed once a week or once a fortnight, the cerebro-spinal fluid being allowed to drain until it ceased flowing. He thinks that the reduced pressure resulting from withdrawal of the fluid leads to a relative hyperaemia of the vessels of the cord and brain, and improved nutrition owing to the increased vascularity. The positive pressure in tabes and general paralysis he attributes to obstruction of the arachnoid villi and lymphatics of the inflamed membranes. The present treatment for cerebro-spinal syphilis at his clinic consists of intravenous injections of arsenobezol, mercurial inunctions and spinal drainage.

Price summarizes the treatment used at the United States Public Health Hospital No. 49 in Philadelphia: Following upon six weeks' course of neosalvarsan intravenously, with mercurial inunctions and potassium iodide, spinal drainage was instituted, while each patient, rather than the disease, was treated by regulating the diet, exercise, etc., and improving physical tone with hydro and electro-therapy. Two years treatment is necessary before any positive conclusion can be reached as to the prognosis or value of specific therapy.

Of 12 patients treated regularly for one year, 4 showed no improvement, while of the remainder none actually recovered, though they showed varying degrees of change for the better either mentally, physically, or both. The blood Wassermann became negative in 3 and the spinal fluid Wassermann negative in 2.

It is to be regretted that when an ex-service man comes to a Public Health Hospital suffering from syphilis in any form, a spinal

puncture cannot be made in many cases, owing to the patient's refusal, hence we are unable to avail ourselves of the knowledge that would be gained by an examination of the fluid either for diagnosis or treatment.

DISCUSSION

John Walker Moore: I believe we all appreciate Dr. Thompson's paper on the cerebro-spinal fluid. Like all his papers this one is very thorough and leave little for us to discuss.

Whether the cerebro-spinal fluid is an excretory product of the choroid plexuses has been the source of infinite debate for decades. I believe it was Hill, in about 1890, who made the statement that the cerebro-spinal fluid was a transudate rather than secretory in origin, and tried to substantiate his assertion by presenting experimental evidence.

Mott, in 1910, made the statement that he thought the secretion of the cerebro-spinal fluid was in the choroid plexuses, that it was a secretion and not a transudate. He states that normally there are no cells in the cerebro-spinal fluid; that in certain groups of diseases, however, the fluid contains cells; that the cerebro-spinal fluid does not cause hemolysis of the erythrocetas of animals.

We know at present that we may have antibodies, or the complement of syphilis, in the blood without having any antibodies in the spinal fluid, excepting when the meninges or brain is involved. Cushing states that there is no uric acid normally in the cerebro-spinal fluid. Frazier experimentally has shown that increase in blood pressure is followed by a decrease in the production of cerebro-spinal fluid. In the animal he ligated the carotid artery on both sides and found that the secretion of cerebro-spinal fluid was normal.

He injected watery extracts of such organs as the liver, pancreas, spleen, etc., and found in these animals there was an increase in blood pressure but a decrease in excretion of the cerebro-spinal fluid.

About eight years ago there came under my observation a patient who had a fracture of the petrous portion of the temporal bone in which there was escape of spinal fluid from the ear. I observed the patient for about ten days and tried different drugs on the child to see what effect they would have. I tried first atropine and found the pulse rate was increased about thirty points; the cerebro-spinal fluid was rapidly reduced for the first hour, after that the production of fluid was about normal. I repeated the experiment the folfoilowing day with similar result. Then a few days later I injected 6 m. of a 1-1000 solution of adrenalin chloride. There was an increase in blood pressure at the time and the production of cerebro-spinal fluid was markedly decreased. This method was afterward tested experimentally in animals and found to be correct, i. e., that the injection of adrenalin caused an increase in blood pressure and a decrease in the flow of the cerebro-spinal fluid. Animals were also injected with amyl nitrite which of course reduced the blood pressure and in these cases there was a marked increase in the excretion of spinal fluid. Therefore, it looks as though we were dealing with a secretory rather than a transudative process.

Histologically we know the villi of the choroid plexuses were surrounded by cuboid cells, and that these cells showed the characteristics of cells that belonged to the glandular system. As clinicians, however, we are not so much interested in the production and absorption of the cerebro-spinal fluid as we are in the diagnosis of certain pathological conditions. We have, from a laboratory standpoint, a number of methods of determining whether or not we are dealing with any definite pathology. First, pressure of the cerebro-spinal fluid. We are not determining the pressure of the cerebro-spinal fluid at the city hospital, and I do not know whether it is practiced in the city or not, but in other places it is used constantly. Whenever we get a decided increase in pressure of the cerebro-spinal fluid we are certainly dealing with a pathological condition. We have to be sure, though, that our technique is not faulty especially when there is a low pressure. If the patient is quiet in the prone position with high pressure, then there is no mistake; but with a low pressure there is likely to be a mistake because the needle may be blocked. Then comes the cell count; if one reads the literature it will be found that some men say a cell count above twenty is pathological, some say above ten, some say above five cells. I think the method used in counting the cells is responsible for the wide normal variation. If we should use the same system in counting the cells of the cerebro-spinal fluid that we use in counting the red blood cells I do not see how we can make a mistake. I believe Dr. Thompson is absolutely correct, i. e., anything above six cells is suspicious, and anything above twenty is pathological. I believe this rule will hold good whether there are any clinical symptoms or not.

In regard to the chemical tests: I think we can rely most on the qualitative test rather than on the quantitative test. For instance in testing the cerebro-spinal fluid for protein we use a number of methods. One is the sulphosalicylic acid (two per cent) another is the mercuric chloride test (one per cent) both give a precipitation of protein. These used together give us much information. The sulpho-salicylic acid test in epidemic meningitis gives an enormous precipitate, whereas the mercuric chloride solution would give only a moderate increase in precipitate formation. On the other hand, in certain other diseases we get an exceedingly high precipitate formation with mercuric chloride solution and a small precipitate with sulphosalicylic acid.

Dennis working in Folin's laboratory of Boston during the last year has given us a colorimeter test for increased protein in the cerebro-spinal fluid. This is a quantative test and I cannot see that it is of any great advantage over other methods. I have used it at the city hospital, but it is so much trouble and the technique is so tedious that we have abandoned it. We can get more information by trying a number of tests rather than relying on one particular test which requires so much time.

As to the globulin content of the cerebro-spinal fluid: Here again I think we should not rely on one test alone. In the Noguchi test we have a good one but it is not entirely reliable. The Jones test, using a saturated solution of ammoniun sulphate is not always reliable, but sometimes gives us fairly definite knowledge. We also have the carbolic acid test which is well known. All these tests depend upon coagulation of the protein the same as occurs in the heat and acid test of the urine. I think in all cases, especially where one test is negative, we should try at least two of those recommended.

In syphilis we may get an increase in cell count, increase in pressure and increase in globulin contact before we get a positive Wassermann unless an enormous amount of cerebro-spinal fluid is used in making the Wassermann test.

Wm. J. Young: I would like for Dr. Thompson to tell us in closing just what his personal ideas are in regard to the treatment of neurosyphilis. He did not speak of this phase of the subject at length in his paper.

I agree most heartily with what has been said about the Wassermann reaction, i. e., that it is merely an adjunct in the diagnosis of neurosyphilis. I think one of our greatest mistakes today is that spinal punctures are not made often enough. In every case, after the first course of treatment has been completed, spinal puncture should be made and the spinal fluid examined, and this should be repeated after we feel that the patient is clinically cured.

The diagnosis of neuropsyphilis is a most important item, and I feel that the sooner we get a line on how the patient is progressing as regards his spinal fluid the more intelligently we can treat him.

As regards the pressure of the cerebro-spinal fluid in neurosyphilis: I am quite well aware that the pressure is not always recorded, but believe it should always be considered, although it is true that we occasionally see patients with neurospyhilis who have a high cell count, and a four-plus Wassermann, with a very low spinal fluid pressure, just as we sometimes see a case of neurosyphilis which may progress to paresis or locomotor ataxia with a negative spinal fluid Wassermann.

I do not understand why Dr. Thompson laid so much stress on mercurial inunctions in the treatment of neurospyhilis: I believe in inunctions, but I also believe in giving soluble or insoluble mercury in the treatment of constitutional syphilis. I am only repeating what everybody knows when I say that mercury is the main thing in the treatment of syphilis, that it is the drug on which the most dependence can be placed in the clinical cure of constitutional syphilis; but I also wish to say that arsphenamin is the drug on which we can place the most dependence for controling the symptoms. I regard neurosyphilis as a symptom of constitutional syphilis, just as are the eye manifestations, tertiary lesions of the skin, etc., and for that reason I believe we can accomplish more good with arsphenamin in neurosyphilis than by the use of either iodide or potassium or mercury.

In regard to the treatment of neurosyphilis' I think it is alwyas well to get any possible benefit that may be obtained from the intravenous injection of arsphenamin. I do not mean by this that we should neglect mercury, because we give this drug also at different times. After we have given intravenous injections of arsphenamin if the patient is unimproved, I think we are then justified in trying the intraspinous method. It has been my personal experience that in paresis the patient is often made worse instead of better by giving arsphenamin intraspinously, but in locomotor ataxia or in syphilitic involvement of the spinal cord marked improvement has been noted following intraspinous medication after repeated attempts to improve the patient by intravenous treatment.

We do not know very much about the treatment of syphilis, we are merely "shooting at the moon," but I hope some day we will get to the point where we really know something. I think those of us who are treating syphilis constantly realize this to a greater extent than the average physician. We do not know what we are dong, we are simply governed by our clinical results, and it has been my experience in treating quite a number of patients with locomotor ataxia, that after an intensive course of intravenous arsphenanim and mercury without getting any result whatsoever, then with the combination of intravenous and intraspinous arsphenamin to get cessation of symptoms and to put the patients back on their feet again, so to speak, for the time being at least. I am sure that by the method of treatment I have mentioned the disease has been arrested in many instances. Of course I realize that we cannot regenerate nerve tissue which has been destroyed, and the best we can do is to produce temporary improvement in the nervous symptoms and postpone or prevent some of the crises and other manifestations that arise in late cases. If

we can temporarily arrest the disease by the institution of intravenous and intraspinous treatment I feel that we have accomplished something.

John J. Moren: The essayist has left little for us to say; he has told us nearly everything about the cerebro-spinal fluid from a diagnostic standpoint and as an aid in the treatment of neurosyphilis.

My opinion is in accord with the statement made by Mott, i. e., that the blood may be Wassermann positive in a great many affections other than syhpilis, whereas a positive spinal fluid Wassermann invariably means the presence of syphilis. Increase in pressure, cell count and globulin content may occur in other diseases, but a positive Wassermann of the cerebro-spinal fluid is not found in any other disease except syphilis.

The question of neurosyphilis raises the point: why does the nervous system become involved in cases of syhpilis? Some men believe that the headaches, many of the pains, etc. in early cases are indications of involvement of the nervous system. Whether that means irritation from toxins or whether it means that spirochaetes are lurking in nervous tissues is the question to be answered. Personally I have seen locomotor ataxia, well developed clinically, four years after syphlitic infection. Why is that? Is it on account of some inherent peculiarity of that particular individual, or is it because of the lack of adequate treatment Dana believes with a number of other men that a certain proportion of individuals will develop neurosyphilis regardless of the amount of treatment given them. It has frequently been noted that there is a certain similarity in inidviduals who develop locomotor ataxia. This is not true in every case, but there seems to be a certain type that is particularly prone to develop locomotor ataxia. Is neurosyphilis due to lack of proper treatment? I knew a Kentucky physician, who is now dead, who had a wonderful reputation in the treatment of syphilis. I am familiar ith a large number of the patients he treated and none of them developed neurosyphilis. Many of these patients are living today, they are personally known to me, and I am certain they have never had neurosyphilis. His treatment was the administration of mercury; he used this drug by inunction and also internally; he kept his patients under the influence of mercury until they were thoroughly mercurialized. The results he secured made a deep impression on me. The results secured by Dr. Greenway, of Hot Springs, also made quite an impression on me in my earlier days. I have seen many of the patients he treated and none of them developed neurosyphilis. He was also a "mercury man." On the other hand, I knew one physician in Louisville, now dead, who treated many patients for syphilis, and I have seen four or six cases of locomotor ataxia from his practice. I am a believer in mercury in the treatment of syphilis. The majority of cases of neurosyphilis, in my opinion, develop because of improper treatment in the early stages of the disease. I believe that is the whole secret of it.

J. E. Hays: The study of neurosyphilis has been rather intensive during the last few years, and a paper on this subject is timely. I am glad that Dr. Thompson, in the first portion of his paper, gave us an outline of the cerebro-spinal fluid, its origin, circulation, etc.,—without such knowledge we could not get a comprehensive view of the subject.

In regard to the Wassermann reaction: I fully realize the advantages of this test not only as an aid in the diagnosis of syphilis but as a means of indicating the treatment to ascertain whether it is sufficient or otherwise. I believe the Wassermann test is reliable if made by a competent observer. Nearly all of the study of syphilis in recent years has been done by laboratory men, and possibly we have depended too much on information which has come from that source. Like the essayist, I think the Wassermann test is reliable, but it should always be corroborated by clinical and historical data. The management of syphilis, in my opinion, should be largely under the guidance of the serologist.

As to the use of mercury: I want to be included among those who advocate this form of treatment. It may be interesting to note that during one of the recent meetings of the American Medical Association, in the section on Dermatology and Syphilology, I heard a prominent physician make the statement after many years of observation, that if he were ever so unfortunate as to contract syphilis his whole reliance would be on mercury by inunction. I was also told by Professor Huten Miller in the Munich Hospital for syphilis, when I asked him why he persisted in using mercury by inunction instead of hypodermatic injections, or by the intravenous or intramuscular method, that he could see no reason for changing his plan of treatment when he was securing good results.

While there is perhaps no remedy that can be used in the management of syphilis in its various forms which gives such brilliant and rapid results as arsphenamin, yet when it comes to actual clinical cure there is but one remedy and that is mercury.

J. Rowan Morrison: We are all indebted to Dr. Thompson for his splendid review of existing information concerning the cerebro-spinal fluid. As regards the treatment of syphilis, there is little to be added to what has already been said. I believe everybody realizes now that arsphenamin is not the sterilizations magna formerly thought for syphilis. I have proven this in my own practic when the arsphenamin treatment was very new. A young man, a known syphilitic, went east and was given four or five injections of arsphenamin

and was told no further treatment would be required. Two years later he returned to Louisville with definite signs of neurosyphilis. He was then vigorously treated with mercury, idodide of potassium and arsphenamin, intravenously administered, extending over a considerable time. The disease seems to have been arrested, at least it has never progressed to the parenchymatous stage While arsphenamin will not cure syphilis, I am sure it will cause some of the symptoms to rapidly disappear. The bset results are probably secured by a combination of arsphenamin, mercury and iodide of potassium. I have had several patients treated by the intraspinous method, and must say the results have been no better than when other plans were used. Of course we cannot hope to restore nerve tissue which has been destroped.

S. G. Dabney: I was escpecially interested in the comparison Dr. Thompson made between the cerebro-spinal fluid and the intraocular fluid. Just a few words about neurosyphilis: I have been practicing in eye diseases for quite a number of years and have seen many patients with neurosyphilis. A considerable number of these patients consult the oculist first because of double sight. They have the Argyll-Robertson pupil and they have beginning atrophy of the optic nerve. During my entire practice it has been my habit to have a heart-to-heart talk with patients of this type. They are interrogated with reference to their life history, date of syphilitic infection, symptoms, duration of treatment, and methods employed. I think I am speaking accurately when I say that I have never seen a case of neurosyphilis in a patient who had been treated vigorously with mercury, preferably by inunction, for a period of three to four years. I believe mercury still remains the most effective drug we have for the treatment of syphilis in any of its forms.

W. E. Gardner: I want to express my appreciation of Dr. Thompson's splendid paper, especially his discussion of the physiology of the cerebrospinal fluid.

One recent method referred to by the essayist, which is just being introduced into this country, is the injection of malarial toxin into the individual in the treatment of paresis. This is particularly interesting to me, because when I was in the Central State Hospital, Lakeland, in 1904, we had there a prominent citizen who had formerly been connected with a newspaper in Louisville, who had a typical case of paresis. At that time we did not know much about the Wassermann reaction, nor was it apparent that all cases of paresis were due to syphilis; it was believed the great majority were due to syphilis, and it was also thought undue stress, strain, alcoholic and sexual excesses, in fact anything that would impair the vitality of the individual would not only act as an exciting cause in the production of paresis but might actually be the determining factor. In this particular individual, no treatment for syphilis had ever been instituted so far as he knew, possibly he was treated for a short time during the acute stage. He had typical paresis, at times became quite violent and had to be confided to his room. About that time he developed facial erysipelas there occurred such marked amelioriation of the symptoms of paresis that he became practically normal. Within a few weeks he was able to leave the institution; he went to a smaller town in Kentucky where he remained clinically well so far as his mentality was concerned for a number of months, but later died rather suddenly from cerebral hemorrhage.

I can recall several other cases not dissimilar in character where remissions occurred following infections of various types.

The question arises as to just what effect local infection may have in the production or development of antibodies in such cases. In the cases I have seen there was evidently an arrest of the degenerative changes which were taking place. I believe malarial infection is being used for this purpose because it can be controlled; it is a toxin that can be introduced without danger and when the proper effect has been produced can be controlled promptly by the use of quinine. I cannot believe, however, that many cases of paresis, where actual parenchynatous changes have taken place, will ever be permanently cured by this or any other mehtod of theratment. It is possible the advocates of this form of treatment may have had some striking cases of remissions by the use of this treatment, just as have been noted heretofore from other infections; but this method has the advantage that it can be controlled by quinine after the malarial toxin has reached its maximum. This plan has received favorable consideration in Europe and is now being tried in this country.

Dr. Thompson's paper is extremely conservative and I believe voices the opinion of the majority of us who have observed neurosyphilis for a good many years. It is cautious so far as extreme methods of treatment are concerned, especially in paresis, and tabes. We know that we have seen cases of paresis, at any rate, made very much worse by opinous medicatiion. Some cases of tabes have apparently improved, or at least have not been made worse so far as I have observed by this form of treatment. As a personal observation, I am rather inclined to believe that intravenous treatment with spinal drainage would meet with my approval so far as arsphenamin is concerned. I agree with Dercum that as much benefit has been derived from drainage of the cerebro-spinal fluid as from the introduction of arsphenamized serum.

We all agree, I am sure, that mercury is still the sheet anchor in the treatment of all forms of syphilis. The pendulum has gradually been swing-

ing back to this drug during the last few years. There has been a remarkable change in the sentiment of the members of the Jefferson County Medical Society since Dr. Edward R. Palmer has been talking about the use of mercury not only by mouth, but also by injections and especially by inunction. He was considered "old-time" in his criticism on the use of arsphenamin when he first began discussing the question about two years ago; but Dr. Thompson's excellent paper which we have just heard bears out many of the points Dr. Palmer has advocated during the last three years in his papers and talks before the Jefferson County Medical Society The effect obtained from mercurial inunction is sometimes remarkable. I believe the reason this method is not more extensively used is because it is rather troublesome and the patient does not like it. The physician sometimes hesitates about recommending the inunction treatment because the method appears uncleanly and many patients object to it.

I was very much surprised in treating a case of locomotor ataxia about a year ago; the patient had been given the usual amount of arsphenamin and later several series of mercury salicylate intramuscularly with the customary periods of rest. He was not improving as expected and I advised mercurial inunctions. The first inunction consisted of one-half dram of unguentum hydrargyrum and after its application the patient became salivated, although he had taken several series of mercury salicylate injections and the inunction was given a three months rest. I am sorry to say that the patient has not improved very much under the inunction treatment.

John J. Moren: In regard to the question of malarial infection in connection with late syphilis: I have had under observation two patients with locomotor ataxia who contracted malaria. One was a race horse man; he used to follow the races at Louisville, New Orleans, Hot Springs, and other places; the only treatment he would take for his syphilis would be a course of baths when he was in Hot Springs; he contracted malaria, the disease assumed the tertian type, and he was constantly fighting it with quinine. To me it was remarkable how this man could continue going about; he showed no ataxic symptoms, he had some pain, no actual crises, he had typical Argyll-Robertson pupils, loss of reflexes, and some disturbances of sensation.

The second case was one of unrecognized syphilis in a professional man; he received quite a serious injury in a fall and following that developed the typical picture of locomotor ataxia. He became a traveling man and was sent south where he contracted malaria. It was astonishing to me the way this man was able to get about. He continued to travel and the disease did not progress. Whether the malarial infection had any influence on the progress of these cases is questionable. Some cases develop slowly, regardless of treatment.

Cuthbert Thompson (closing): I wish to thank the gentlemen of the society for their liberal discussion. I read this paper as I believe the early symptoms of neurosyphilis are often overlooked, and permanent changes have occurred in the nervous system before a diagnosis is made. My reason for describing the production and absorption of the cerebro-spinal fluid was on account of the references made to intrathecal medication in the treatment of neurosyphilis. If one does not understand how the fluid is absorbed he is not in very good position to discuss that method of treatment.

In every case of syphilis I believe the pressure of the cerebro-spinal fluid should be accurately taken and not estimated, because increased pressure is usually one of the earliest symptoms of neurosyphilis. In making this test the water gauge instead of mercury should be used.

As stated in the paper I believe spinal puncture should be made after the first year of treatment of every case of syphilis to determine the condition of the cerebro-spinal fluid. If this were done I think there would be a great deal less neurosyphilis.

It seems quite certain that, in many instances, the early symptoms of neurosyphilis are overlooked by physicians who have had little experience in neurology. Temporary paralysis of ocular muscles, headache, Argyll-Robertson pupils, transient pains, etc., often among the earliest manifestations of neurosyphilis, are overlooked or disregarded by the physician. I believe every patient should be especially examined for neurosyphilis in the early stages of syphilis.

In regard to question of mercurial inunction: specialists who used arsphenamin with intramuscular injections of mercury are prone to neglect the older methods of treatment, especially inunctions.

In England and Scotland inunctions are used in treating syphilis. I was glad to hear Dr. Dabney say that he had never seen a case of neurosyphilis where the patient had been treated for three or four years with mercurial inunctions, and I can corroberate this in my own practice.

In neurosyphilis if the patient does not improve under the usual methods of treatment, I believe we are justified in giving the intraspinous method a trial.

In reply to Dr. Gardner it is true that malarial infection of syphilities in the treatment of paresis, etc., produces no change in either the blood or spinal fluid Wassermann. In other words, the patient is not cured; it produces a remission of symptoms.

PYLORIC STENOSIS, REPORT OF A CASE.*

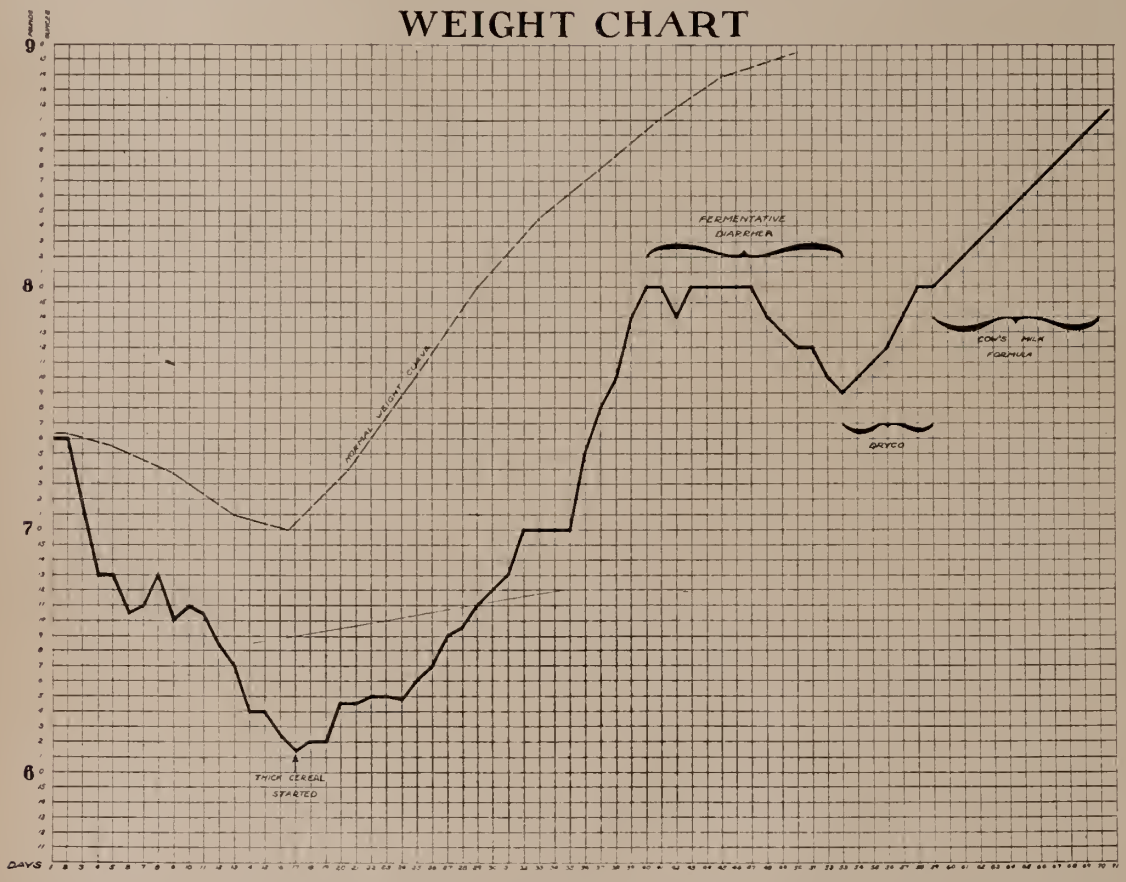
By Frederick G. Speidel, Louisville

The particular characteristics by which pyloric stenosis may be recognized are as follows: Vomiting which is forcible or projectile in character; the fluids often gushing to a distance of a foot or more from the child's mouth. This occurs immediately or very soon after feeding, and water is vomited as well as milk. Occasionally a feeding is retained and a second feeding taken and then both are vomited at once. The child does not look sick and will eagerly take another feeding immediately after vomiting. Loss of weight due to the small amount of food that is retained. Constipation. The stools that are passed are small in quantity, dark brown or green in color and of a thick pasty consisteney, typical starvation stools. Scanty urine due to the loss of fluids from persistent vomiting. Visible *peristaltic waves* which pass from left to right across the upper abdomen. A palable tumor which may sometimes be felt in the upper righ quadrant and which represents the hypertrophied muscle of the pyloric sphincter. Roentgen ray studies are confirmatory but are obviously difficult on a vomiting child. These characteristics together with the more general considerations that the onset is generally during the first few weeks of life, rarely later than the sixth week, and that 80 per cent of the cases occur in boys, makes this condition fairly easy of recognition.

The following case is presented:

Mrs. L. L. W., was admitted to the Norton Memorial Infirmary at 6:30 A. M., November 21, 1921, in the first stage of labor. At 2:25 P. M. the same day she gave birth to a male child weighing 7 pounds 6 ounces. The child, B. N. W., who is the subject of this report, was apparently normal in every respect, but on the second day it began to vomit and persisted in so doing immediately after each nursing and also after taking water. It lost weight rapidly, its urine was scanty and it passed stools of a typical starvation type.

Careful investigation indicated that it was not being fed too rapidly, too frequently or too generously, nor was the breast milk too rich. There was no fever or other sign of infection either local or general and there was no evidence of an acute abdominal condition.



*Read before the Jefferson County Medical Society.

A suspicion that pyloric stenosis was the cause of the trouble was confirmed when vigorous peristaltic waves were seen passing across the upper abdomen from left to right.

A small dose of carmine was administered to the child and although it vomited promptly, a small portion of the red coloring matter was found in the stool on the following day thus eliminating the possibility of congenital absence of the duodenum or other portion of the intestinal tract. The parents, upon being informed of the condition, requested that medical procedures be given a fair trial before resorting to surgery. Thereupon various measures were instituted for the relief of the condition, including gastric lavage, the hypodermic administration of atropine sulphate, brief nursings at three hour intervals and the rectal administration of peptonized milk and Lock's solution. On several occasions under this regime slight improvement was recorded, but the general tendency of the weight curve was downward until on the seventeenth day the child weighed 6 pounds 1½ ounces, a loss of 20½ ounces or 17 per cent of its birth weight.

Feedings of thick cereal* prepared as follows, were then started: Skimmed milk 9 ounces, water 12 ounces, farina 6 level tablespoonfuls, and Karo corn syrup 3 ounces. This mixture was cooked in a double boiler until it was thick enough to stick to an inverted spoon. It was fed to the child through a Hygeia nipple the end of which had been cut off making a hole in it about one quarter of an inch in diameter. The cereal was placed in the funnel shaped portion and pressed through the nipple into the child's mouth with the fingers. Two ounces were given every three hours.

Improvement was prompt and marked as may be seen from the weight chart. Occasionally a thick cereal feeding was vomited but not often. Atropine sulphate, 1|500 grain hypodermically four times daily and Locke's solution, six to eight ounces daily per rectum, were continued. At various times attempts were made to give fluids by mouth but they were always promptly vomited and this usually caused the loss of a cereal feeding in addition. After twenty days of thick cereal feedings the child had regained its birth weight with improvement continuing. When a weight of eight pounds had been reached at the age of six weeks a rather severe fermentative diarrhea occurred which lasted ten days and caused a loss of seven ounces in weight. This loss made it imperative that the gastric route again be tried for the administration of fluids and in spite of numerous previous failures it was again attempted. Contrary to expectations water was retained in satisfactory quantities. The child was then given a weak Dryco mixture for a few days and then a regular cow's milk formula suitable for its age and weight.

Since that time it has not vomited and has developed normally, teething, walking and talking at the usual ages. On November 21, 1922, at the age of one year, it weighed 21½ pounds and was taking the usual diet for a child of its age.

*Sauer, L. W. A further contribution to the study of pyloric stenosis; Am. Jour. Dis. Child., 22: 166 (Aug. 1921).

DISCUSSION

D. Y. Keith: Everyone familiar with the diseases of children can appreciate what Dr. Speidal has done for his little patient. The x-ray is invaluable as a diagnostic aid in pyloric stenosis, but I understand was not used in this case. The carmine test is also of advantage as shown by Dr. Speidal.

When a baby vomits everything it takes if a small amount of bismuth is given and x-ray examination made four, six or even twenty-four hours afterward, it will be found that some of the bismuth has passed into the intestine, showing that obstruction is not complete or that the stomach is completely emptied.

Dr. Speidal has shown us what can be done if one is persistent and understands how to treat such cases.

M. Casper: The result in the case reported seems rather unusual if true pyloric stenosis existed. I believe it is doubtful whether it was a case of true stenosis. There is a difference between congenital hypertrophic pyloric stenosis and spastic stenosis. Many cases of so-called "seven weeks" or "seven months" colic in infants would come under the latter classification and nearly all of them are relieved by the administration of atropine.

While I was still in the general practice of medicine I had the opportunity of seeing several babies with so-called seven weeks colic. Large doses of atropine were given and the colic was promptly relieved. Therefore I think in the case reported by Dr. Speidal much of the credit should be given to atropine. Of course the scientific management was also important and was handled in the proper manner.

The doctor is to be congratulated on the pains he took in this case and also on the splendid result obtained.

B. J. O'Conner: Based on the report which we have heard, I do not understand how Dr. Casper can say this was not a case of true pyloric stenosis. The literature of pyloric stenosis today—and there have been numerous articles published on the subject—shows that under atropine treatment relief is usually obtained. A few years ago similar patients, especially if there existed a pal-

pable tumor or any thickening about the pylorus and obstructive symptoms, would have been subjected to operative treatment.

By proper diet and the judicious use of atropine the symptoms will subside in the vast majority of cases.

F. G. Speidal (closing): The differentiation between pylorospasm and true hypertrophic pyloric stenosis is sometimes rather difficult. When the pyloric muscle is in a continual state of spasm it will undergo hypertrophy, and this is true of any other sphincter muscle. The difference between the two conditions, therefore, is one of degree and duration than any essential difference in the two ailments. Spasm of the pylorus persisting for any considerable length of time tends to become converted into hypertrophic stenosis. Numerous cases have been reported where no tumor was palpable in the living child, yet tumor was demonstrated at autopsy, sometimes at operation.

The administration of atropine is important, and no doubt this drug will relieve some cases. In the case reported atropine was given continually from the onset of symptoms, and no improvement was observed, or only a slight improvement occasionally. The general tendency was downward until thick cereal was given. From that time the tendency as decidedlp upward and the child recovered.

BOOK REVIEWS

The Form and Functions of the Central Nervous System. An introduction to the Study of Nervous Diseases by Frederick Tilney, M. D. Ph. D. Professor of Neurology, Columbia University; Attending Neurologist, the Presbyterian Hospital, and the New York Neurological Institute, Consulting Neurologist, Roosevelt Hospital, New York and Henry Alsop Riley, A. M., M. D. Associate in Neurology, Columbia University, Associate Attending Neurologist, New York Neurological Institute; Attending Physician, Neurological Department, Vanderbilt-Clinic, New York. Foreword by George S. Huntington, Sc. D., M. D. Professor of Anatomy, Columbia University. Second Edition, 591 figures containing 763 illustrations of which 56 are colored. Paul B. Hoeber, New York, Publishers, Price $12.00.

This work is designed to fill the gap between morphology and the practical requirements of clinical medicine. It aims to visualize the living nervous system, to make accessible an appreciation of its vital relation to the functions which go to make up life as well as the defects in these relations which result in disease.

FORUM

To the Editor:—

The annual assembly of Tri-State District Medical Association, composing the entire state of Iowa, Illinois, Wisconsin, Minnesota and Districts of surrounding states will be held at Des Moines, Iowa, October, 29th, 30th, 31st and November 1st.

The entire time of the assembly will be taken up with addresses, essays, symposiums and diagnostic clinics.

The Kentucky physicians are most cordially invited to attend and participate in the program.

The headquarters of the assembly will be the Fort Des Moines Hotel and the scientific and clinical sessions will be held in the beautiful new Woman'c Club building. Hotel reservations should be made early by communicating with the Fort Des Moines Hotel or Dr. Walter L. Bierring, Iowa member of the program committee, Des Moines.

Many eminent members of the profession will take part on the program.

To the Editor:—

For many years I have been using an obstetrical record published by Joel A. Miner, Ann Arbor, Mich., which is very complete in every detail for the record of obstetrical cases in book form. He has discontinued the publication of same. Can any publisher furnish me with a record blank similar to Miner's?

Very respectfully,

J. T. REDDICK.

IN MEMORIAM

Whereas: Our beloved friend and fellow member, Dr. L. S. Givens, has passed into the Great Beyond at the time of life when he was most useful to his profession and community, and recognizing these qualifications; be it, therefore,

Resolved: That the members of the Harrison County Medical Society, remembering with affection and admiration his many attributes, express our profound regret and sense of loss at his removal from our midst.

Since the organization of this Society (twenty-eight years ago) he has been a constant laborer for its advancement as well as for the whole medical profession.

To the social side he brought a happy personality, always a cordial, pleasant greeting and a disposition sensible, kindly and sympathetic.

It is ordered that these resolutions be spread upon the minutes and a copy be sent to his family with our sincere sympathy in their great bereavement.

E. S. McILVAIN, Chm.
J. E. WELLS,
W. B. MOORE.

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ANNUAL MEETING, CRAB ORCHARD SPRINGS, SEPTEMBER 17, 18, 19, 20, 1923

COUNTY SOCIETY REPORTS

Barren: The second meeting of the Third District Medical Society was held in Glasgow on June 27th, with the following members present: J. J. Adams, C. C. Turner, S. R. York, G. T. Reid, E. L. Palmore, T. L. Jones, W. P. Drake, T. H. Singleton, S. J. Martin, C. C. Howard, J. B. White, Jno. F. Cooke, C. W. Froedge, E. D. Turner, L. C. Biggers, S. M. Bowman, G. N. Keen, J. W. Grubbs, B. S. Rutherford, M. M. Moss, Chas. E. Francis, John B. Floyd, L. E. Comstock, H. P. Honaker, C. A. Calvert, Walter Byrne, Sr., J. H. Blackburn, J. L. Godby, F. G. Carroll, F. Edwards, A. T. Botts, P. E. Blackerby and Leslie Richey.

The sessions were held in the auditorium of the Christian Church. After the invocation by the pastor, Rev. Roy H. Biser, and Introductory Remarks by the President, Dr. Walter Byrne, Sr., of Russellville, a case report of an unusual case of tetanus was given by J. H. Blackburn, Bowling Green. This was discussed by Drs. Howard and B. S. Rutherford.

W. C. Simmons, Smith's Grove read a paper on the Treatment of Empyema by the Closed Method. This paper was discussed by Drs. Moss, Floyd, Rutherford, Grubbs, Keen, Turner, Froedge, Cooke, White, Honaker, Howard, Bowman, Calvert, York and Simmons.

Dinner was served at the Liberty Hotel.

B. S. Rutherford, Bowling Green, read a paper on the Significance of Extremes in Blood Pressure. This was followed by Principles in the Treatment of Compound Fractures by Dr. John B. Floyd, Kyrock. These two papers were discussed by Drs. Calvert, Drake, Simmons, Botts, Honaker, Howard, Comstock, Carroll, Blackburn, Rutherford and Floyd.

The society adjourned to meet in Scottsville the last week in August.

Bracken County: A re-organization meeting was called at the Courthouse, in Brooksville, Wednesday, July 18, 1923, by J. E. Wells, Councillor of the Eighth District with the following physicians present: W. B. Wallin, J. C. Norris, C. R. Rice, B. F. Workman, C. F. Haley and J. M. Stevenson. The election of officers resulted as follows: President, W. B. Wallin; Vice President, J. C. Norris; Secretary, J. M. Stevenson; Board of Censors, C. R. Rice, B. F. Workman and C. F. Haley. C. R. Rice was chosen as the delegate to the State Society meeting at Crab Orchard.

By a unanimous vote the first Monday in each month was chosen as the date for the regular meetings. Same to be held in the Bracken County Courthouse for the present.

J. C. NORRIS, Secretary.

Boone: After a sleep of two years and under the pressure of a letter by Dr. A. T. McCormack which every member or rather every doctor in the county received, our local fraternity took courage and had a call meeting on the 12th of July at the Burlington theater in Burlington. We had with us Drs. C. G. Hoffman, Wallace Frank and P. E. Blackerby, of Louisville.

C. G. Hoffman gave the members present a very interesting and instructive illustrated lecture on Ureteral Catcherization and Diseases of the Kidney Pelvia.

L. W. Frank gave us one of the most practical talks illustrated by lantern slides on goiter that we all felt after listening attentively that we have been overlooking a great many cases of toxemia that no oubt have their origin in the thyroid gland.

R. E. Blackerby in his usnal manner admonished us to remain organized and recalled the "good old days" when we were a unit. The following local doctors were present: S. B. Nunnelly, R. E. Ryle, O. E. Senour, M. A. Yelton, G. C. Rankins. After listening to the above named gentlemen the local society or rather members proceeded to organize by electing S. B. Nunnelly, president; R. E. Ryle, secretary-treasurer; G. C. Rankins, delegate and O. E. Senour, alternate. We want to thank the visiting doctors very much an hope that we may be honored again in the near future by having them present.

R. E. RYLE, Secretary.

Livingston: We at last got the Livingston County Medical Society together, and re-organized. The results of which is as follows:

The Livingston County Medical Society met at Tiline, Ky., on July 26th, 1923, at 2:30 p. m. In called communication, for the dispatch of snch bnsiness as would regularly come before it.

Members present: Drs. John Haden, Jr., Salem; Roy Waddell, Salem; J. E. Fox, Smithland; T. M. Radcliffe, Tiline, and W. F. Gardner, Smithland. The meeting was called to order by the president W. F. Gardner. After some short talks by each one present, the society proceeded with the election of officers, which resulted as follows:

Dr. John Haden, Jr., Salem, President; W. F. Gardner, Smithland, Secretary. F. G. LaRue, Lexington was elected delegate, and Edward Davenport, Levington, alternate.

The following members paid dues: T. M. Radcliffe, Tiline. It was agreed by all to meet at Salem, August 22nd, 1923. There being no further business to come before the society at this time same was closed.

W. F. GARDNER, Secretary.

Montgomery: Resolutions of the Montgomery County Medical Society on the death of Dr. Woolfolk Barrow.

Whereas, it has pleased divine providence to call from our midst Dr. Woolfolk Barrow,

Resolved that we give expression of our feeling of regret and loss on the account of his death,

That we have lost a true friend, a public benefactor that cannot be replaced.

Resolved that we hereby tender to his sorrowing wife and chilren his beloved father, brothers, sisters and relations our sincere sympathy in their sadness.

Be it further resolved that these resolutions be spread upon the minutes of this society and a copy furnished the Kentucky State Medical Society, Lexington Leader and his bereaved widow and family, and local papers.

P. K. McKENNA,
O. P. HENRY,
M. FAULKNER, } Committee

Nicholas: Nicholas County Medical Society met at the court house at 2 p. m.

Members present were M. Dills, T. P. Scott, O. S. Kash, C. W. Kash, L. B. Holmes, L. K. Swango, J. Cray Martin, B. F. Reynolds, and W. H. Martin.

Minutes of tht last meeting (March 29, 1921) were read and approved.

T. P. Scott resigned as Secretary.

W. H. Martin was elected President.

L. K. Swango, Vice-President, and Dr. C. W. Kash, Secretary.

O S. Kash was elected as delegate to Convention, B. F. Reynolds, Alternate.

C. W. KASH, Secretary.

Late Results in the Treatment of Syphilis. H. H. Hazen, Washington, D. C. (Journal A. M. A., June 23, 1923), says there are no satisfactory criteria as to the cure of syphilis. Relapses may occur after a patient has been asymptomatic and had a negative Wassermann reaction for six or seven years. Not all cases of early chancre are cured by modern methods of treatment. The early and intensive administration of arsphenamin may prevent a patient from developing a natural immunity, and a relapse may occur shortly after treatment is discontinued. Cerebrospinal syphilis can develop by the time the chancre is manifest. Every patient shonld have a spinal puncture preferably just before the second course of arsphenamin. A provocative Wassermann may be misledaing, and may be dangerous in that a relapse may follow it. A luetin recation under proper precautions may be of value as a criterion of cure. The results of treatment in early secondary syphilis are surprisingly good. A few cases of late syphilis can be cured, but in the vast majority of instances, late syphilis cannot be cured. Intraspinal therapy will often yield results when intravenous therapy fails.

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EDITORIAL

NEW PRESIDENT OF THE A. M. A.

Dr. William A. Pusey, of Chicago was elected president of the American Medical Association at San Francisco.

Dr. Pusey is a Kentuckian, born in Elizabethtown and his father was one of our most distinguished physicians. For many years Dr. Pusey has been treasurer of the Association. He limits his practice to disease of the skin and was in charge of the activities in this line of medical work during the World War. The medical profession of Kentucky is particularly pleased with Dr. Pusey's selection. His family were among those who came to our Commonwealth in its infancy over the Old Wilderness Trail and last year Dr. Pusey was the author of a book giving a remarkable description of the first trail which brought the pioneers and citizens to Kentucky.

The Kentucky State Medical Association will give to Dr. Pusey its loyal, faithful support and next year at Chicago there will be enough of us on hand to indicate to the whole profession the esteem in which we hold him and it.

THE CRAB ORCHARD MEETING

When this number of the JOURNAL reaches its readers the Crab Orchard Springs meeting of the Kentucky State Medical Association will have already written its story upon the pages of Kentucky's medical history.

In this issue we are only able to publish the Address of the President and the Orations in Medicine and Surgery. In the next issue will be found the full proceedings of the House of Delegates and the Minutes of the Scientific Sessions.

THE SAN FRANCISCO SESSION.

The American Medical Association held a most profitable meeting in San Francisco. The registration was 3765, which was nearly 1500 more than the last session there. The sessions were held in the magnificent City Auditorium, and there was room to spare for the scientific and commercial exhibits and all the section meetings. The scientific program was, of course, the usual contribution of the leaders of medical progress and was very much appreciated by those in attendance.

The scientific exhibits this year were especially noteworthy. Of equal value were the commercial exhibits. These were practically all of the advertisers in the Journal of the American Medical Association and in this JOURNAL and, like the commercial exhibits at our annual meetings, demonstrated the progress in scientific apparatus and medical literature of the year.

The social features of the meeting were delightful. The President's Reception was held in the several ball rooms of the Fairmont Hotel, one of the show places of the city. The women visitors were given almost continuous receptions and automobile trips. President and Mrs. Wilbur held a delightful reception at Stanford University. The entire profession of California joined with their brethren in San Francisco as hosts. Clinics were provided in every center on the Pacific Coast during the week preceding and following the meeting. A very remarkable book was published by the profession of California, not only giving medical information in regard to the clinics but also locating and describing the scenic wonders of the Pacific Coast. Copies were furnished to all who registered and anyone interested in our great Pacific Coast country will be repaid by writing Dr. Wm. Musgrave, Balboa Bldg., San Francisco, for a copy.

The Women's Auxiliary of the American Medical Association, which idea had its conception in Texas, was finally and firmly put on its feet at this meeting. The following officers were elected for the ensuing year: President, Mrs. S. C. Red of Honston, Texas; President-Elect, Mrs. J. Allen Hodges of Richmond, Va.; Vice-Presidents, Mrs. Southgate Leigh, Norfolk, Va., Mrs. Robert E. Farr, of Minneapolis, Minn., Mrs. Seale Harris of Birmingham, and Mrs. F. P. Gengenbach of Denver, Colo.; Recording Secretary, Mrs. W. A. Wood, Waco, Texas; Corresponding Secretary, Mrs. H. L. D. Kirkham, Honston, Texas; Treasurer, Mrs. A. E. Baker, Charleston, S. C.; Parliamentarian, Mrs. Harris Smith, Delta, Colo.

The Secretary of the Association reported a membership of 88,519 and a Fellowship of 55,444. In Dr. West's report will be found the following interesting and pertinent paragraph:—

"Our scheme of medical organization is, theoretically, extremely democratic. In its

practical application it is evidently the desire of the members and of the officers of this Association that it shall operate along democratic lines to the fullest extent compatible with effective methods and with the possibilities for real accomplishment. It would seem, therefore, that the constituent state association should assume initiative in most organizational affairs and in most movements of interest to the medical profession. There appears to be, however, a very decided difference of opinion as to where the initiative of the American Medical Association should begin and where the responsibility of the constituent state association leaves off. There are those things which the state association must do for itself, which the American Medical Association cannot do for it and should not do if it could. There are those things which the state association can do for itself or which the American Medical Association can do for it. In such matters it would seem wise for the state association to take the initiative and for the parent body to act only on the request of the constituent organization. There are still other things that the American Medical Association can do for its constituent and component societies and their members which they cannot do as independent organizations. These the Association should do on its own initiative and to the limit of its facilities. The publication of seven scientific journals and a magazine for the lay public, all of which have won recognition as meritorious periodicals, is evidence that the Association has not been unmindful of its duties and responsibilities. The headquarters organization is a veritable service bureau, in which all departments co-operate in replying to thousands of inquiries of every conceivable kind each year. Numerous other examples of service rendered by the Association in an effort to discharge the responsibilities which devolve directly on it might easily be cited. That so much has been done is an earnest that more will be undertaken, when, as a result of constructive criticism, supplemented with constructive suggestions, methods can be devised and means provided. It is for this House of Delegates, composed of the chosen representatives of the nearly 90,000 physicians who make up its membership, to determine and define the policies of the Association with respect to its relations with component and constituent societies, its relations with other organizations, and its relations with the body politic."

The report of Trustees showed that the Association was $263,475.91 better off than it was the previous year. At the time of the meeting its assets were $1,263,411.24. When the additions to the present building are completed, which are now under course of construction, it will cover a space of 100x160 feet, six stories and basement.

The Journal of the A. M. A. printed 80,862 copies per week last year. The records show that but few of these came to Kentucky. The great value of the Journal to the medical profession is evidently not realized by many of our members. It brings to subscribers the latest and most dependable scientific discussions. Its original articles and its editorial and current comment columns always contain something of interest.

Hygeia, the lay publication recently inaugurated, had 19,500 subscribers on the first of last May. This is an auspicious beginning. As the profession interests itself so that the public will understand the true purpose of this publication, its subscription list will increase rapidly. Indeed, it so nearly takes the place of many of other activities heretofore carried on by the Journal that the House of Delegates discontinued the Council on Health and Public Instruction, which has done such good work for the past fifteen years. Many of the delegates were in doubt as to the advisability of this course, but it was recommended by the members of the Council and approved by the Board of Trustees.

The Board of Trustees recommended a term of five years for each trustee with a limitation of two terms in consecutive service. As this was an amendment to the constitution, it could not be acted upon until the next session.

The A. M. A. publishes a bulletin about which very few of our members know anything. It has heretofore been sent to the officers of the county societies. The secretary recommended that it should be sent without cost to the Fellows of the Association. This was aproved by the House of Delegates. As the bulletin carries much of the detail of the work of the organization, this movement should do much to stop many of the criticisms of our great parent organization by providing all the members with information as to its inner workings.

The Board of Trustees was authorized to reduce the annual dues to $5.00 and it is hoped this can be done within the near future.

The Minutes of the House of Delegates containing much that is of practical importance to every physician was published in full in the Journal of the American Medical Association, and those of our members who are Fellows of that Association have doubtless read these proceedings.

The San Francisco session will go down in the history of the Association as one of the most successful it has held.

PASTEUR.

We have just had the privilege of reading a copy of the remarkable volume published in Philadelphia in commemoration of the National Celebration of the Centenary of the Birth of Louis Pasteur on December 27, 1922. It is one of the most beautiful volumes which has been brought to our attention. Full-page photographs of Pasteur and of those who participated in the program add to its interest. Among those who delivered addresses were Drs. Russell H. Chittenden, of Yale University; John B. Deaver of the University of Pennsylvania; Hugh S. Cumming, Surgeon General of the Public Health Service, and Monsieur Jules Jusserand, the Ambassador of the French Republic.

Sir Auckland Geddes, the British Ambassador, himself a physician, possibly summed up, better than any other, history's esteem of Pasteur when he said, "His contributions to knowledge were epoch making. Contribution and knowledge confer undying fame on him who makes them. Generation by generation knowledge has to be renewed by observation and experiment, lest it grow stale and unprofitable. At the most the name of a man, who is the winner of new knowledge and nothing more, is remembered by the world as the root from which new works are derived. Pasteur was far more than a scientific discoverer of the first rank. His was a great soul, which was and is an active force in the lives of men of science. His lovable character, his frank and kindly simplicity are examples, to those who have won fame through original research, to those who stand at the threshold of a scientific career, if they will but listen. His voice still speaks wise words of council. Each of these would do well to have inscribed, so that it would come daily before his eyes, this sentence from the master's inaugural Address at Lille—'In the field of observation, chance only favors those who are prepared.' It is the simplicity, the kindness, the mellow wisdom of Pasteur that makes the great discoverer's personality immortal."

Kentucky and the South were represented on the program by our own beloved Dr. Lewis S. McMurtry whose subject was "Pasteur and Surgery," and which was delivered with the grace and completeness of this master of English.

One of the most noteworthy of the contributions in the volume was that of President Pritchett of the Carnegie Foundation on "Pasteur and Science."

The volume wisely closes with this apt quotation:—

"Great captains, with their guns and drums,
Disturb our judgment for the hour,
But at last silence comes;
These all are gone, and, standing like a tower,
Our children shall behold his fame."

THE INTEREST OF WOMEN IN THE MATERNITY AND INFANCY PROGRAM.

In another column of this issue of the JOURNAL we are publishing the program of the Department of Public Welfare of the Kentucky Federation of Women's Clubs. We are sure this will be of interest to every physician in the state. We hope that each of them after reading it will give it to his wife and to the members of the church and other women's societies and clubs, so that we may secure for the women's organizations of the State the cooperation and support of every other woman possible.

This is a remarkable program. It puts behind the profession the unanimous support of the intelligent women of the State. It behooves us to accept the leadership they proffer us that we may help them to make maternity safer and may take better care of the babies of Kentucky.

NEW MAGAZINE IN HEALTH FIELD

In an attractive new dress, in a more compact and readable form, with its value enhanced by the dignity of print, the most recent number of "Venereal Disease Information," a monthly publication issued by the United States Public Health Service at Washington, has just come from the press.

This magazine, as the name indicates, is intended primarily for health officers, physicians, nurses and social workers engaged in venereal disease control activities. The present issue contains several special articles, noteworthy among which is one on general paresis. The bulk of the magazine, however, in conformity with the custom established in previous mimeographed issues, is composed of brief abstracts of articles dealing with venereal diseases which have appeared in current publications, both foreign and domestic. The contents is divided into six sections under the heads of special articles, research, diagnosis, treatment, clinical notes, and public health and administrative notes.

For some time past this information has been furnished state health departments, venereal disease clinicians, hospital libraries, medical society libraries, medical school libraries, medical journals, public health nurses'

associations, training schools for nurses, social service agencies and other organizations in the form of mimeographed monthly abstracts. The wide use made of the information contained in these abstracts and their popularity so impressed the Public Health Service with the desirability of presenting the information in a more readable form that the new publication is the result.

The subscription price for this new periodical is 50c per year payable to the Superintendent of Documents, Government Printing Office, Washington, D. C. The number of subscriptions already received from members of the medical profession would indicate that the more permanent form in which this information is now appearing meets with the approval of the group for whom the publication is designed.

OBSTETRICAL COLUMN

Edited By Alice N. Pickett

Director of the Prenatal Clinic Louisville City Hospital.

From a study of our cases this month our attention was drawn to the especial importance of several points:

(1) 20% of our mothers gave positive Wassermans. The babies of these mothers receiving anti-syphilitic during the prenatal period were saved, the babies of mothers receiving no treatment, were, with one exception, lost.

(2) From case 10 we were again impressed with the danger to the child in cases of flat pelvis. We now realize that this case should have come to Caesarian Section, rather than to forceps. In our anxiety to avoid the common abuse of Caesarian Section, we have often leaned to the other extreme and by temporizing too long at delivery, have euchred ourselves into such a position that delivery by the vaginal route became our only alternative.

(3) From Case 26 we learned that a spontaneous delivery in a generally contracted pelvis is not free from danger to the baby. More and more we are realizing the extreme delicacy of a baby's head and its susceptibility to injury.

(4) From Case 14—we were able to demonstrate again the necessity of constant vigilance in the prevention of eclampsia. There is no doubt in our minds that this woman was on the verge of convulsions for 36 hours before her delivery and was spared this catastrophe by the prenatal care which she received.

SYPHILIS (7 cases).

Seven of our 34 mothers of this series gave positive Wasserman tests. Four of these were delivered at term of babies which were apparently normal up to their time of their dismissal from the hospital on the 14th day after delivery.

The following table gives the treatment of these mothers with the results:

Case 1—3 plus—1 injection of Neo—baby living and well.

Case 2—4 plus—2 injections of Neo—baby living and well.

Case 22—4 plus—4 injections and 2 of mercury—baby living and well.

Case 27—4 plus—no treatment—baby living and well.

Three (3) syphilitic mothers lost their babies, the following is significant:

Case 4—3 plus—no treatment—baby lived 18 hours.

Case 13—3 plus—no treatment—baby lived 14 days.

Case 17—3 plus—no treatment—baby still born at 7 months.

FETAL DEATHS—(7 cases).

3 deaths from maternal syphilis (Cases 4-13-17).

2 deaths from prematurity—no syphilitic (Cases 8-25).

1 death forceps delivery—flat pelvis (Case 10).

1 death spontaneous delivery—generally contracted pelvis (Case 26).

(1) Forceps.—(6 cases).

Case No. 10. Hospital No. 51283. Para 2. Dr. Fry, Interne; Drs. Rubel and Pickett, staff. An examination made on admission showed the measurements, between the spines, 22, between crests, 28, external conjugate 21, diag. 10—from which we knew we were dealing with a flattened pelvis. The first stage was very slow and tedious. The second stage pains were good and the position L. O. A. At mid pelvis position, all progress stopped and forceps were applied. A still-born baby weighing 7½ pounds, was delivered the cause of death being cerebral hemorrhage, due to injuries sustained at delivery.

(2). Case No. 11. Hospital No. 51313. Para 1. Dr. Fry, Interne: Dr. Pickett, staff. On examination on admission, pelvis was found to be of normal dimensions. A persistant R. O. P. position, without progress after a mid pelvic position has been attained, necessitated interference. The head was rotated manually to an anterior position, forceps applied, and a living baby, weighing 7 pounds 14 ounces, was delivered. Mother and child discharged in good condition.

Obs. Service, Louisville City Hospital. 7-1-23 7-24-23. Dr. Clem C. Fry, Int. Dr. G. S. Buttorff, Ext.

Hospital Deliveries

No.	Reg. No.	Para	P. C. Care	B.P.R.	Wass.	Prenatal Syph. Tr	Ch. of Pelv.	Ch. of Delv.	Pos.	Wt. Baby At Term		Fate of Baby	Condition of Mother	Condition of Baby on Discharge
1	51220	9	Clinic	114-130	3 Plus	1 Shot Neo.	Normal	Spontaneous	L O A	8.0	yes	living	No Examination	Good—No evidence of syphilis
2	51221	5	No		Neg.		Normal	Spontaneous	L O A	6.4	yes	living	Good	Good
3	51239	1	Clinic	Normal	4 Plus	2 Shots Neo.	Normal	Spontaneous	R O A	7.0	yes	living	Good	Good—No evidence of syphilis
4	51236	6	No		3 Plus	none	Normal	Spontaneous	L O A	7.15	yes	Lived 8 hrs.	Fair	Dead
5	51249	1	No		Neg.		25-28-29	Breech Extraction	Breech	5.10	yes	living	Good	Good
6	51256	6	Clinic	Normal	Neg.		Mod. Contracted	Spontaneous	L O A	8.4	yes	living	Tubercular	Good
7	50464	2	Clinic	112-145	Neg.		Normal	Spontaneous	R O A	11.0	yes	living	Good	Good
8	51276	1	No		Neg.		Normal	Spontaneous	O. A.	3.4	6 mos.	Still Born	Good	Dead
9	51279	6	Clinic	Normal	Neg.		25-26-22	Spontaneous	R O A	7.11	yes	living	Good	Good
10	51283	2	No		Neg.		22-28-21-10	Forceps	L O A	7.8	yes	Still Born	Good	Dead
11	51313	1	No		Neg.		25-29-20	Forceps	R O P	7.14	yes	living	Good	Good
12	51314	2	Clinic	130-160	Neg.		Normal	Spontaneous	?	7.7	yes	living	No Examination	Good
13	51341	2	Clinic		3 Plus	None	22-24	Spontaneous	R O A	7.5	yes	Lived 14 Days	T. B. and Lues	Dead
14	51254	1	Clinic	120-200	Neg.			Forceps	L O A	6.0	yes	living	Good	Good
15	51362	8	No		Neg.		Normal	Spontaneous	L O A	8.4	yes	living	Good	Good
16	51409	1	No		Neg.		Normal	Spontaneous	L O A	5.2	yes	living	Good	Good
17	51423	1	Clinic	Normal	3 Plus	None	Normal	Spontaneous	?	1.11	7 Mo.	Still Born	Good Except 3 Plus	Dead
18	51445	1	Clinic	130	Neg.		Some Flattening	Forceps	R O P	6.5	yes	living	Good	Good
19	51467	2	Clinic	Normal	Neg.		Normal	Spontaneous	L O A	7.8	yes	living	Good	Good
20	51493	1	No		Neg.		Normal	Spontaneous	L O A	4.10	8 mos.	living	Good	Good
21	51498	1	No		1 Plus		Normal	Spontaneous	L O A	8.1	yes	living	Good	Good
22	51511	3	Clinic	Normal	4 Plus	2 Sal.. 4 Neo.	Normal	Spontaneous	L O A	6.13	yes	living	Good	Good—No evidence of syphilis
23	51462	2	Clinic	Normal	Neg.		Normal	Spontaneous	L O P	7.10	yes	living	Good	Good
24	51572	2	No		Neg.		Normal	Spontaneous	L O A	6.13	yes	living	Good	Good
25	51589	2	Clinic	Normal	Neg.		Some Flattening	Spontaneous	R O A	5.9	8 mos.	Lived 3 Days	Good	Dead
26	51579	2	Clinic	Normal	Neg.		Genl. Contracted	Spontaneous	L O A	7.0	yes	Still Born	Good	Dead
27	51632	1	No		4 Plus	None	25-29-20	Spontaneous	R O P	7.2	yes	living	Good Except 4 Plus	Good—No evidence of syphilis
28	51636	2	Clinic	114-136	Neg.		Normal	Forceps, 1 child Potter's Ext, 2 ch	R O P Breech	6.6 6.10	yes	living	Good	Good
29	51629	1	No		Neg.		Flat	Forceps	L O A	8.1	yes	living	Good	Good
Home Deliveries:—														
30		2	No		Neg.			Spontaneous	L. O. A.	6.3	yes	living	Good	Good
31		3	Clinic	120-138	Neg.		Normal	Spontaneous	L. O. A.	?	yes	living	Good	Good
32			No					Spontaneous	O. A.	?	yes	living	Good	Good
33		5	Clinic	110-138	Neg.		Normal	Spontaneous	L. O. A. Breec	? ?	yes	living	Good	Good
34		3	Clinic	128-157	Neg.		Normal	Spontaneous	L. O. A.	8.?	yes	living	Good	Good

No. of Clinic cases, 19.
No. of Non-Clinic cases, 15.
No. of Foetal Deaths, 7.
No. of Puerperal Infections, 0.

No. of Clinic H. B. P. cases, 9.
No. of Eclampsia cases, 0.
No. of Pre-Eclamptic cases, 1.
No. of Maternal Syphilis, 7.

No. of Retro-version on Discharge, 2 slight.

(3). Case No. 14. (See pre-eclampsia).

(4). Case No. 18. Hospital No. 51445. Para 1. Dr. Fry, Interne: Dr. Pickett, staff. In prenatal clinic these measurements were found to be 27-29-20-11½. Ontlet fair. The prognosis was "normal delivery for small baby." The first stage was completed in 15½ hours. Arrested progress in 2nd stage with a persistant R. O. P. position, in spite of hard pains, necessitated interference. The head was rotated manually to an anterior position and forceps were applied and a living baby was delivered weighing 6 pounds and 5½ ounces. Mother and child delivered in good condition.

(5). Case No. 28. (See twins).

(6). Case No. 29. Hospital No. 51629. Para 1. Dr. Fry, Interne: Dr. Pickett, staff. This patient had no prenatal care. On admission she was found to have a generally contracted pelvis—24-27-18½-11½—arch and spines fair. The progress was slow from the beginning of labor, the pains being desultory during the first 24 hours. Near the end of the second day the pains became harder and more regular and the head descended slowly, showing cephalo-pelvic disproportion. The fetal heart ran up to 195 per minute and forceps were applied as a means of saving the baby's life. A living baby 8 pounds, 10 ounces was delivered—mother and child discharged in good condition.

FETAL DEATH from Cerebral Hemorrhage, following spontaneous delivery.

Case No. 26. Hospital No. 51579. Para 2. Dr. Fry, Interne: Dr. Pickett, staff. A clinic patient—pelvis found to be "generally contracted of moderate degree,"—prognosis, "delivery normal for small child." The first stage was long and tedious due to the fact that the head was not able to fit snugly down into the pelvis. The dilatation was however completed spontaneously and the descent was slowly progressive for the first two hours of second stage. After that time the interne reported a slowing of progress with the head in L. O. A. position. He thought forcepts were indicated but owing to the staff doctor's delay in getting to the hospital, the baby was born spontaneously, 55 minutes later. The baby was still born and at the post-mortem examination later, a large subdural hemorrhage was found as the cause of the death.

TWINS. Case No. 28. Hospital No. 51636. Para 2. Dr. Fry, Interne: Dr. Pickett, staff. This patient came to clinic. Her pelvis was normal. We were able to make a diagnosis of twins by palpating 2 fetal heads and counting 2 fetal hearts of different rates. The x-ray plates verified our findings showing one child in breech and the other in cephalic presentation.

At delivery first stage was completed spontaneously but there was no progress after 1 hour and 15 minutes of hard second pain. Forceps were applied and the first baby was delivered in L. O. A. position. Immediately the 2nd bag of waters was ruptured manually and the 2nd baby was delivered by bringing down both feet at the same time and delivering in breech position by the Potter method.

The first baby weighed 6 pounds and 6 ounces, the second one weighed 6 pounds, 10 ounces. The mother and both babies were discharged in good condition.

Case No. 33. Home delivery. Dr. Buttorff, Externe: Mr. Silas Starr, Student. Clinic case. Diagnosed twins, in clinic. One child in cephalic and one in breech presentation. The first child was delivered spontaneously in L. O. A. position; the second by breech extraction. Mother and children were discharged in good condition.

AN ECLAMPSIA PREVENTED.

Case No. 14. Hospital No. 51254. Para 1. Drs. Fry and Buttorff, Internes: Dr. Pickett, staff. This patient was admitted to the hospital from the clinic as a pre-eclamptic. She had at that time slight headache, slight oedema of feet and ankles, a negative urine, and a blood pressure of S. 145-d.90. Her physical examination was otherwise negative, except for a slight systolic murmur at the apex and an accentuated 2nd aortic. She was about 8½ months pregnant.

She was given calomel grain 1 every hour for 3 doses—followed four hours later by a soap suds and soda enema. Magnesium sulphate one ounce was ordered every A. M. She was kept in bed on a milk diet. This was changed to a milk and cereal diet, on the following day. On the 2nd day after admission her blood pressure was 138-90. Her headache had disappeared and her oedema had become very slight. She was given a more generous diet but was allowed no meat, eggs, cheese or dried beans and her morning dose of magnesium sulphate was continued.

On the following day she complained of slight, persistant, dull headache, showed a slight increase in oedema and confessed to having eaten a considerable amount of hospital hash. On the 5th day after admission her condition at morning rounds was found to be alarming. Her headache was severe and persistant, the legs showed marked oedema and the blood pressure was 200-120. She was given at once a 5 gallon colonic irrigation of 5% soda solution after which her pressure dropped to 168-96. She was then given 5 grains of calomel, followed after four hours by magnesium sulphate. A hot wet pack of 30 minutes duration finally lowered the blood

pressure to 150-90 and an ice cap lessened the headache. Six hours later her pressure rose to 180-90 and she was given a second irrigation followed by a second hot pack. The pressure dropped to 144-80 and the patient had a comfortable night.

On the next day the urine showed a trace of albumen which was the only urinary abnormality found ante-partum. She complained of severe headache, her blood pressure, 158-96 and the oedema had increased during the night. She was put into a hot pack for 30 minutes. Six hours later her pressure rose 172-110 with increasing headache. 500 c.c. of blood was withdrawn and the patient put in a second hot pack. She fell into labor during the day and a living baby was delivered by low forceps as a means of lessening the strain of the 2nd stage.

On the following day the blood pressure was 154-112. She had no headache and no oedema but the patient was dull and drowsy. For the next three days the systolic pressure remained high from 150-180. It did not become normal until the 9th day of the puerperium.

Because of the slight urinary change, a negative blood chemistry and a negative eye ground, we were able to rule out a nephritic condition. We made a diagnosis of pre-eclampsia and we believe this woman was saved from convulsions by her admission to the hospital before her symptoms became marked and by the promptness of our internes and nurses in combating the increasing toxaemia.

SOUTHERN MEDICAL ASSOCIATION

Among the alumni dinners to be given in Washington, D. C., at the coming meeting of the Southern Medical Association will be one for the alumni of the University of Louisville, School of Medicine. This will be held at the New Willard Hotel either on November 13th, or November 14th, 1923. Please write at once to Dr. Emmet F. Horine, 370 Francis Building, Louisville, if you desire to attend.

High Voltage Roentgen-Ray Therapy. Sherwood Moore, St. Louis (Journal A. M. A., July 28, 1923), asserts that the high voltage roentgen-ray method of treating malignant disease accomplishes much in an otherwise therapeutically sterile field—that of advanced malignancy. However, it is an addition to and not a replacement of any agency at present used in the treatment of malignant disease. Patients with widespread extension and metastases should have less surgery and more radiotherapy.

ORATIONS

PRESIDENT'S ADDRESS.*

By Frank Boyd, Paducah

Following the time honored custom of the Kentucky State Medical Society in addressing you, I desire first to express my profound gratitude to the House of Delegates for the great honor they have conferred upon me. It is an honor greater than any other which I have ever received, or ever expect to receive. I know my shortcomings, and that many others present could have more adequately represented the profession than myself, and it is with a feeling of humility that I accept the Presidency of this association, realizing that I am following in the foot steps of some of the greatest medical men which this country has produced. Nevertheless I pledge you that for the ensuing year I will use my utmost endeavors to advance the interest of the profession, hoping thereby to be of real service to all of the people of our Commonwealth.

I desire to speak a word of commendation for the Journal and its able editor. I have carefully studied the articles published in the past year, and find little to criticise but much to commend. The editorials have been ably written and compare favorably with any that I have read. It is to be regretted that more papers from the county societies in the rural communities have not been sent in for publication. Many of the papers presented at the various county societies are well worth publication, and a more earnest effort should be made by their Secretaries to obtain written papers and reports of interesting cases and send them in for publication in the Journal. I feel sure they will add much to the Journal, as well as stimulate a more active interest in the county medical societies.

There is no one thing more earnestly desired than a united active profession, and this can be had only by a more conscientious attendance of the county societies. These frequent meetings will bring friendly co-operation and constructive advancement in the profession.

The by-laws contemplate that the councilors of the various districts in the state shall visit each county society at least once annually. I feel that these visits are of the utmost importance and should be made. I feel equally sure that this work has been to a great extent neglected. I hope at our next annual meeting every councilor will be able to report a hundred per cent fulfilment of this obligation. There has been much discussion,

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not only by the profession but by the laity, about the absence of physicians in the rural communities, and suggestions have been made that the standard of medical education be lowered; the idea being that more young men would take up the study of medicine and locate in our rural communities not now having a physician. To my way of thinking this would be a serious mistake, the standard requirements of our medical schools should be maintained. The schools of medical instruction should be kept at the same high standard now required in Kentucky. It would be the height of folly to admit students in our schools without proper literary qualifications as a mere matter of expediency. As a matter of fact, I do not believe there is a shortage of qualified physicians. It is true that many rural communities which were formerly served by two or three physicians now only have one or none, and these communities have only themselves to blame. Physicians are human, and if the community which they serve will not pay for services rendered, they cannot blame their medical friends for moving to greener pastures. Inquiry among many men who have changed locations as to their reasons for changing, the answer is almost invariably the same. First, they are not paid for services rendered for more than one year, if at all. Second, the neighborhood will not maintain a good school, thereby denying the doctor's family a place in which to educate his children. Neither will the neighborhood maintain its roads in a passable condition, thereby placing a further handicap upon the physician in his endeavor to serve the people. While the automobile has extended the territory served by the physician, at the same time the doctor is not the only one with a car. When the people will display the same diligence in paying their doctor bills that they do in paying for gasoline, tires, automobiles and accessories, there will be no difficulty in keeping the qualified medical men in their midst. When a physician has to borrow money, as many of them do, to pay for the drugs furnished in their practice, it is indeed time for him to seek a more liberal and enlightened community.

For many years the profession has had at heart the formation of a Department of Health with a secretary in the President's Cabinet. I note with pleasure that this movement crystallized into the creation of a Department of Education, Health and Welfare with prominent directors of the technical bureaus and such a consolidation of the existing thirty or more bureaus in Washington, having ...lth and educational functions, so that there may really be developed a national program in regard to health and education. It is very important that the proper safeguard be thrown around federal health activities. Under the Constitution of the United States, the police powers are reserved to the states and we do not want to even seem to approve ... federalization of these police powers. The present tendency for the creation of new bureaus for every popular health fad is to be deprecated. Temporary federal appropriations for State aid and health and educational matters unquestionably stimulate local appropriations and, in this way, do good, but it would be far better if a constructive national health program could be formulated ...ith technical experts who could be summoned in consultation when the states felt they needed them, but there should be no federal supervision of local health activities.

We should endeavor to impress upon our people and, through them, upon our representatives in the Senate and House of Kentucky the necessity of providing necessary funds for expenditures to be made through our own State Board of Health constituted as it is and has been for many years on a thoroughly non-partisan basis, with a view to improving the health of our own people. It is particularly important that county health departments be improved and strengthened because these organizations, co-operating with the profession through the county medical societies, carry to the people themselves the lessons which mean better health and longer life. In principle there is considerable objection to the venereal disease, maternity and child hygiene federal appropriations. Practically, however, these appropriations as used in Kentucky, with the complete approval of the profession, have been of great value and, as they are temporary and will decrease from year to year, we should accept their benefits but the great objection to such legislation is that it is a makeshift for a real constructive policy on the part of the federal government which can only be attained when the bureaus having education and health functions are consolidated into a health department.

We have another problem which concerns the medical profession, I refer to the workman's compensation law, and it seems to me that we should take action to have this law revised so that physicians and surgeons could receive a reasonable compensation for their services in compensation cases. As the law now is, only $200.00 may be paid for medical surgical and hospital care in a workman's compensation case. Practically all of the industries in Kentucky working under the compensation laws are insured by casualty companies who stand in the same relation to the injured that the employer does. It cannot be questioned that in minor injuries in compensation cases physicians have been paid for

their services, whereas without compensation laws they would in most cases have received nothing. On the other hand in serious injuries requiring long hospital treatment, such as a compound fracture of the thigh or leg, serious and extensive burns, or any other serious injury, the physician and surgeon receive for their services the merest pittance. I have in mind several such instances where services were rendered over a period of three or four months with the patient in the hospital a good part of the time, and it was necessary for him to be in the hospital if he was to be restored, in which the physician in charge received less than nothing for his services. The hospital bill is a preferred claim, and usually gets all of the compensation, leaving the physician with very little, if anything, for his services. Why should the physician be expected, in addition to paying his taxes, contribute his service gratis, to make possible a lower tax rate on the industries involved. I think the maximum compensation for physicians, surgeons and hospital services should be raised to at least $500,00. This would enable a conscientious surgeon to keep his patient longer in the hospital and at the same time receive a reasonable fee for his services.

Our profession today is confronted with another serious problem, not so much the manner in which it involves our profession, but as to the serious way in which it affects the lives and health of the people of our state. Many sects or cults are knocking at our doors endeavoring, by paid propaganda and paid lobbying, to have enacted into laws such provisions and changes in the medical practice act as to permit the state to be flooded with half-baked so called doctors, who seek this means to prey upon the public under the guise of physicians. It is an established fact that as soon as one of these sects secures legal status to practice drugless medicine, they almost immediately begin scheming to administer drugs and assume the status of a regularly qualified physician, trying as it were to enter through the back door. It is a strange phase of human nature, and especially in view of a more generally enlightened public, that the men whom we send to the state legislature to represent us will listen to these propagandists when they know that one with less than a common school education, be he a blacksmith, clerk, stenographer, book-seller or what not, can take the prescribed course, graduate, and obtain a diploma within a few months, and expect to be received by the public as a fully qualified practitioner of medicine, yet that is exactly the attitude they assume. Physicians have been called a "Medical Trust" and other hard names, yet it is a truth that they are the only body of men who today, and have been for many years, endeavoring to put themselves out of work by establishing quarantines, sanitary laws, and publicly educating our people in every possible way to avoid disease and how to remain well. The basic requirement of the medical practice act, that one must have a knowledge of anatomy, chemistry, pathology and physiology as a minimum requirement to practice and every form of disease which come to them should be strictly adhered to. These so called cult practitioners undertake and do treat any and every form of disease who come to them for treatment, they claim to treat diphtheria, scarlet fever, pneumonia, typhoid fever, appendicitis and all other recognized serious maladies. We might ask how the health laws can be enforced if one of these cults or sects can treat a case of diphtheria, if he does not know diphtheria when he sees it. As a health measure it is readily recognized that he subjects the entire community to this dreadful disease. If he is treating a case of tuberculosis, and they do treat them, the patient is losing time and lessening his chances for recovery. Human health is too precious to allow it to be imperiled by practitioners who acquire their "profession" with less study, less brains, and less effort than is required for the making of a good plumber. Most potential patients have little or no knowledge of their own anatomy or what may ail it. Many have even less knowledge of the qualifications of those to whom they go for treatment; they must, of necessity, surrender themselves almost blindly into the hands of the physician. It is right that they should be protected in so far as possible from fakes, fads, or ignorance. A law which will do this, and raise and maintain the highest possible standards of the art or science of healing, certainly is needed.

As a profession we must assume one of two attitudes. First, we must be a militant organization, not for our protection as a matter of competition with these people, but for the protection of the health of the people of our state. It has long been the practice of the medical profession to protect the health of the people even against themselves. Or we must assume the position that the people desire to go backward and submit themselves to the hands of charlatans and quacks, exposing their children to contagion, losing their opportunity for recovery from serious maladies. As for myself, and I believe I speak the sentiment of qualified physicians when I say, we should act upon the first of these suggestions, to endeavor to enlighten the people of Kentucky and make them understand that every one who holds himself out as a physician is not a physician. There is a very simple test to apply to these fakes, ask him to do some charity work. He will absolutely refuse and must have his pay in advance before adjust-

ments are begun. If you are not well by the time the adjustments are over, he must have another series of adjustments paid for before he starts on that series. It would seem to be a legitimate procedure for the Kentucky State Medical Society to do a little propagandizing itself in the shape of articles submitted through the public press, showing the fallacy of the claims of these irregular practitioners. They advertise themselves and without advertisement they would die a natural death, they obtain practice only so long as they can advertise. It might be good for the public to ask what advancement or what discovery for the benefit of humankind has ever been made by one of these irregular practitioners. They cannot give one single instance of any really humanitarian benefit as an excuse for their existence. Why should they not be required to pass an examination in the basic fundamentals in the practice of medicine, drugless or otherwise, if they are to claim the right to so practice. It is an acknowledgment of inferiority on their part when they come up for legalization, but when they come before the public they claim to be much smarter than the man who has devoted eight or ten years to the study of the practice of medicine.

Let us in going about our daily work keep ever in mind the high calling to which we have dedicated our lives, remembering the precepts of our predecessors, that our profession is one of service to humanity, that our constant endeavor shall not only be to restore the afflicted to health, but to prevent, so far as may be, sickness in the community in which we live.

The Kahn Precipitation Test for Syphilis. The results in 1,000 cases in which the Kahn and the Wassermann tests were made by Janet Holmes, St. Louis (Journal A. M. A., July 28, 1923), show a very close correlation between the two tests, with the balance in favor of the Kahn test showing a greater sensitivity, especially in treated cases. The Kahn test has the further advantage in that anticomplementary serums give a normal reaction in the precipitation test. Attention, however, should be drawn to the fact that in the Kahn test it is necessary that all serums be absolutely clear. Any fat, for instance, in the serum makes a reading practically impossible, and even slight hemolysis of the serum makes reading difficult. The necessity for care in the mixing of antigens to prevent spontaneous precipitation in nonsyphilitic serums must not be overlooked. But, as the case stands, the outlook for the Kahn test seems most favorable, and with more work on the standardization of antigens, we may hope in the future for a test that will relieve the laboratory of the intricacies of the Wassermann reaction.

ORATION IN SURGERY

SURGERY:—WHY, WHEN, AND HOW?*

By E. M. Howard, Harlan

Surgery properly defined is the art of relieving, altering or mitigating painful, dangerous, or abnormal conditions in mankind by the use of instruments in the hands of a surgeon skilled and trained in their use.

Surgery is no longer in a class with butchery, and is no longer practiced in barber shops as of old, as indicated by the blood-red and white barber sign we have handed down to us today, but it has evolved into a study and practice worthy of the best brain and brawn that the civilized world has produced or is capable of producing, and the successful practice of which requires hard years of preparation and the possession of all faculties and a concentrated concerted effort of the best that is in the individual, because surgery cannot be successfully practiced without a cool, clear head, a steady hand, and I may say an honest heart,—and because of the rapid strides in surgery in the past century, and especially in the last two decades, it calls for greater, stronger, and even better men to give their talent, their strength and their life to its study and pursuit, until now its practice and its accomplishments have been recognized as, in my opinion, the most highly respected, the most confided in, and the most appreciated of any profession the world over. The advances in the last several years, particularly in relation to asepsis and antisepsis and to the newer methods in those departments in which of late such notable progress has been made, as in cerebral, spinal, pelvic, abdominal and plastic surgery is so great that it has opened the eyes of the profession as well as the more enlightened laity and inspired the mind and hands of every active, progressive surgeon to press forward toward the goal of attainment, the end of which no man yet knows.

In the preface of one of our most famous books on surgery are these words: "The most important part of my business is to know what ought to be done." This is recognized throughout the realm of surgery by surgeons and too much importance cannot be given to the prompt, proper and accurate diagnosis of surgical conditions, however, we must pause to recognize at this time the very rapid strides that have been made by our friends, the diagnosticians, for without the aid of the laboratory—microscopical, x-ray, chemical, etc., under supervision of trained and experienced technicians, it would be impossible in a great many cases to arrive at a correct diag-

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nosis and therefore be able to effect a cure by administration of proper surgical treatment.

Surgery is indicated and in a great many instances necessitated when the function of vital organs is obliterated or impaired, and when (1) by its use a pathological lesion or condition may be extirpated completely, incised and drained, or curetted, the end results of which effect a cure of the condition or such alleviation that the normal function of the organs or parts may be restored, either in whole or in part. (2) When by its use broken bones or lacerated tissues may be repaired, replaced or transplanted into in such a way as to render the body or part thereof more useful and more comfortable. (3) When by its use unsightly and uncomfortable disfigurements of face, limb, or body of an individual may be so altered as to render appearance normal, restore function and bring service, comfort and happiness to the unfortunate person.

It would require too much time and space to detail all the reasons why surgical operations should be performed, and we will pass this by saying that wherever a life may be saved, and in some instances two lives by one operation, (as in Caesarian Section) or where life may be even temporarily prolonged with a comparative minimum risk, then should the surgeon do with his might and his skill what his hands find to do.

When

The right time, the best time, the most beneficial time to perform operations for given conditions, known and doubtful, has given rise to lengthy and heated discussions by ardent supporters of given theories which in turn are supported by practical experience of varying extents. We all agree readily that if a hernia is strangulated an immediate operation is necessary, or if an appendix is abscessed and so proven by cardinal symptoms, blood count, etc., it should be removed at once, or if a bowel is obstructed and the patient vomiting fecal matter with all positive symptoms of obstruction then we would say unqualifiedly that the only means left to save the life of the patient is to operate. Then a skillful operator is the only question. However, these cases and similar cases are a very small part of the busy surgeon's work. It is more often necessary for us to baffle with the obscure complicated cases where it requires an accurate process of elimination in order to differentiate between what really is and what might be present. If there is anything that does make a surgeon feel like he has not done his whole duty it is to allow an appendix to rupture while under his constant care, or an intestinal obstruction progress to the point that a resection is necessary, yet the more experience one has had the more he comes to a realization of the facts that things are not always what they seem to be, and that no case should escape the most rigid scrutiny, the most careful observation and constant and never relaxing efforts by use of eye, ear, laboratory and brain in order to determine when is the best time to operate. I frankly believe to the average experienced surgeon the "How" of an operation is important, the "Why" more so, but the "When" most important of all.

Here permit me to digress from general conditions sufficiently long to say that in cases of acute appendices, intestinal obstructions, acute gall bladders, strangulated hernias, puerperal eclampsias without dilation, and especially with primiparae or with contracted pelvices, etc., etc., all of which usually fall into the hands of general practitioners first, and gentlemen the general practitioners of this or any other state are the men that are closest to the hands and hearts of the general public, most loved, respected and much confided in, and therefore necessarily carrying a proportionately heavy responsibility, surgery should immediately be recommended or a surgeon called into consultation, and when upon consultation a condition is found that warrants operative procedure the operation should be done immediately, or as soon as the patient can be removed to a hospital or place where all aseptic and antiseptic measures may be had advantage of.

How

First of all things, to do successful surgery a strict and rigid compliance with all the principles and all the technique of asepsis, it is highly necessary and absolutely essential that every known link in the chain of aseptic preparation be connected in such a routine and systematic way that the hazard of the given operation may be reduced to a minimum. And in these modern days of thorough diagnostic methods, of most thorough understanding of anesthetics by our anesthetists and their careful administration, and with our increased knowledge of shock prevention and shock treatment I should say that the responsibility of the surgeon is great in the event he becomes careless or relaxes his efforts in the least, however, it is proportionately less in the presence of all these if he exercises the everlasting vigilance and care in his technique and preventive preparation that modern scientific investigation, experience and application have proven that he has ever at his command.

It is not necessary to do a herniaplasty after the method of any one of the great men who were pioneers in their work, nor is it necessary to follow exactly after our valiant and

learned predecessors' methods in any given operation, but it is necessary that we have such a perfected working knowledge of anatomy that we may be able to recognize and be able to differentiate the normal from the abnormal, and further to be able to meet conditions as we find them with a clear eye, a cool head and a steady hand.

In 1809 Dr. Ephraim McDowell, a Kentuckian of Scotch descent, performed the first ovarian operation in America. We honor him for his courage as well as his ability. Since his day surgery has progressed gradually but surely until now it is so firmly established in its many branches and subdivisions that practically whatever we do or recommend is taken for granted and is unquestioned by our patients.

"In most surgical cases there is an ideal course of treatment which may be pursued and which represents the highest possibility of surgery."—(Warbasse). In many instances its application requires especial skill and knowledge. Circumstances may surround both the patient and the surgeon which render impossible the applying of the ideal measures or render such attempts inexpedient, therefore, we must have alternatives of treatment which may be employed if the best things possible can not be done. The fact that we have constantly in mind the interest of the patient as the object of supreme consideration compels us to concede that there are differences in surgical ability in the application of treatment, and as the purpose of my thought is not to glorify surgery but to cure surgical patients, this fact must be faced and cannot be overlooked. In surgical diseases the mortality varies with the skill of the surgeon and with the means and equipment with which he has to perform it. So, in many conditions operative procedures are indicated which should be carried out by the experienced surgeon only. Whereas, in the same case an inexperienced operator should pursue an entirely different course. This is made necessary for the reason that there is a pathological hazard which is capable of modifying the outcome of the disease, but a surgical hazard as well. As the pathology of certain diseases is a variable factor in every case, so also is the surgical treatment which the patient may command a variable factor. The average surgeon is capable of efficient administration of the principles of practical treatment of common and average surgical conditions, yet above and beyond the average surgeon is a great class of experts and specialists whose capabilities in relieving suffering, prolonging life, and restoring to health, strength and happiness the damaged and diseased, are the marvel of this age and represent the most beneficent expression of human handicraft. We hope for the day when all surgeons who are entrusted with the lives of human beings shall be equipped that they can apply the ideal treatment in all cases which come to their hands, and when all patients with surgical diseases can command access to the environment which shall provide them the surest guarantee of recovery.

If we would be all that our patients, their relatives, friends, and the general public expect of us as surgeons, I think we may do well to adopt as our motto the following:

"Four things a man must learn to do if he would make his record true:
To think, without confusion, clearly;
To love his fellowmen sincerely;
To act from honest motives purely;
To trust in God and Heaven securely."

ORATION IN MEDICINE

THE RURAL DOCTOR.*

By W. L. Tyler, Curdsville.

When one contemplates, even a year removed, the obligations of a public address to the profession of Kentucky Medical Society, the prospect fairly bristles with themes to be dealt with.

Since so much has been said by both laity and the profession of late regarding the relative condition of rural communities and the medical profession, I thought to refer in a passing way to the country doctor. The country doctor of the old school, before the days of preventive medicine, was confronted with treating people who were really ill. The formerly prescribed duty of the doctor was to minister to the sick and the suffering, but he was ever as alert to acquire such information, as science would furnish for the welfare of the race, as is the modern member of the profession. The old school or fashioned country doctor relied on the powders, pills, tinctures, infusions and such remedies as scientific research suggested to relieve the ills of his patients. Notwithstanding there has been a tendency among the laity, as well as some members of the profession, to place a very low estimate on the old country doctor's efforts and service to his community. I sincerely believe he was more loyal to the best interests of humanity than the modern country or city member of the profession. We should ever remember that human nature with all its boasts of superiority is grievously faulty because of the instability of its emptions. The ideal of a serious and expectant public

*Delivered before the Kentucky State Medical Association, Crab Orchard Springs, September 17, 18, 19, 20, 1923.

transcends the possibilities of an average character, and, indeed, even of the few who rise above to martyrdom and genius too much is demanded. It is in truth an ambitious soul who may hope to justify so full a confidence. The times in which we live are like all other times from time beginning, in that there is no hope of full success. It is not given to mortality to round out a complete victory for we all, like, "The Sultan with his pomp bide our destined hour and go our way," leaving as much unaccomplished as we found. The old school doctor was a volunteer servant to the public, cheerfully giving more time than he expected remuneration for, and contemplating in his field of duty not alone the medication of the sick, but the general welfare of the family and not less that of the community. His aim in relieving humanity and preventing disease was not solely his own profit. Not that the doctor of the past or present is better than his friend the layman, but that it is the line of life he has determined on. The design of most men is one of conformity and to a large degree we are all alike filled with frailties and imperfect virtues; but however much we may strive for or leave undone in life, whether because of some undefined shadow of fear, or some but particular intelligent hope, and however much of this doing or failing is the result of an unconscious unbelief in what we pretend to believe, there is in us all a curious, almost insane, instinctive devotion to what we deem our duty. In the cultivated and particularly among those trained to weighing questions involved in the intimate domestic ties associated with suffering, and closer requirements of life's obligations and possibilities, there is developed the keenest appreciation of duty, and the obligation so bears upon outlooking ambition, as to prepare for unbelievable sacrifices and privations. So much of this is the old time country doctor's' sole sworn oath and his life's daily history that it marked him and his colleagues as the fit Moses in their particular wilderness.

The Present Country Doctor

To those who are familiar with the stupendous progress in our knowledge of disease within the last generation, it is but evidence that the progress exceeds that of all previous centuries. Bacteriology deals with what was formerly regarded as intangible causes. The microscope makes visible the infinitely small. Electricity deals with imponderable forces of a mighty power and yet we can not see electricity. The chemist deals with atoms that even the microscope cannot reveal and the physio-chemists have divided the atoms into electrons still more minute. The student of radio energy has elaborated the X-ray and other rays of potent activity bordering on the supernatural. Radium possesses proved characteristics as supernatural as any conception of ancient philosophers in their study of light. The wireless telegraph carries thought instantly from continent to continent. Thus science has proven that what was formerly a belief in the intangible and supernatural was well based in what we now demonstrate as phenomena and prove as true and powerful forces. The discovery of bacterial causes of disease, the uncovering of the great principles of immunology, with their bearing on the cause and termination of disease, the disclosures of the constant organic and tissue changes affected by certain specific causes, the conception of measuring the changes in functions wrought by disease, with the use of the acquired information for more accurate diagnosis, the advent of the Roentgen Rays and the development of the highly technical knowledge, along special lines has particularly revolutionized in the last generation medical thought and the practical application of medicine as science. This information and these facts furnished and proven by scientific investigation, reveal that the country doctor of the present hour has met his obligations to his clientile and community by relieving the pains and other symptoms of well-developed diseases, but that he can render a greater service under the light of modern investigation by preventing rather than curing disease.

Realization Of Recent Progress

The country doctor of the present should ever be mindful of the progress that has been made in medicine possibly in his professional career. He should strive to keep a clear conception of what changes this scientific progress has made in his duty and relation to his community. Ever mindful of the fact, that the laity has a right and do expect much more in the form of treatment and prevention of disease than a few years ago. Many factors have been responsible for precipitating the present day activities in health problems and preventive medicine, but likely the greatest was the late war. It showed indisputably that health measures properly enforced would decrease, if not entirely control, many diseases that have formerly been among the most destructive agencies of way. The success of vaccine prophylaxis, against small pox and typhoid fever were emphasized; the value of prophylaxis against tetanus was realized as never before. The efficacy of general prophylaxis and the importance of general health and sanitary measures were demonstrated beyond all possibility of a doubt. Educational measures received much attention in the army, and have borne such fruit, as qualifies the former doughboy

to fairly accurately estimate the worth of the home doctor in many respects. Various agencies are engaged in teaching both adults and especially children modern health methods. Life insurance companies have done much to bring preventive medicine to the attention of the public. They have accumulated vast statistics showing the influence of various diseases on life and published and circulated much health propaganda. The activities of the American Red Cross, the National Association for the prevention of tuberculosis, the Association for the promotion of Child Welfare, the National Organization for the Public Health Nursing, and many others too well known to need discussion here have rendered great service. A great deal of credit is due them for their accomplishments during the war and since then. I would not deny nor fail to appreciate the assistance rendered through the activities of semi-medical and non-medical health organizations but country and city doctors alike know too well that the work done by all allied organizations in preventive medicine has been made possible only through the advance in medicine as a science. We all know the world is yet full of wretchedness, deformity and disease, some of which is due to ignorance and stupidity distributed well over the whole population from rich to poor. We all realize that the measure of relief must be apparently slow and gradual, conducted by concentration of many influences wielded by society at large; we all know the obstacles to success as well as the possibilities of abuse in the methods; and we all know the need of directing influence which is thoroughly informed and can be confidently entrusted with power. It is my belief that only through the trust and support of the general public given to the well informed and conscientious medical profession, that the science of medicine can best serve humanity.

Scarcity Of Country Doctors

Much has been said lately regarding the real scarcity of country doctors. Various state organizations as well as National have sought reliable information regarding the need of adequate medical service to rural communities. Such investigation has revealed that there is a dearth of doctors in rural districts, but the condition as a whole is not so bad as it seems from unofficial reports. In consideration of the rural districts we are confronted with the statistical fact, that the rural population from 1910 to 1920 increased only three per cent, while city population increased twenty-six per cent, whereas at the same time there has been a decrease in preventive disease of about twenty per cent.

After the World War many men who entered the service from the rural districts declined to return to the country. It is true that some men who had worked for some time in the country either felt that they were worthy of more professional recognition than a rural district could furnish or a desire for more money with less effort, have gone to the city. Not so many years ago, there were more doctors in the rural district than the work justified. In every instance I have found that the laity in the neighborhood where there was once a physician, think they need one now. It has always been true that medical services were inadequate in sparsely settled districts. However, there are some instances in populous and prosperous rural districts where there are needed today well informed practitioners of medicine. From experience as a rural doctor, I am compelled to state, that there are two factors which above all others make rural work even in prosperous communities undesirable. The first of these is bad roads, second, is lack of educational facilities for the doctor's children. These two factors can only be remedied by community, State and National co-operation.

Irregulars And The Rural Doctor

The charge that the people in rural districts were compelled to receive treatment from poorly trained cultists because of lack of physicians has not been sustained by official investigation. Dean E. P. Lyon of the Medical School of the University of Minnesota found not a single town or community in Minnesota where an ostepath or chiropractor was serving the people without a regular physician available. It was shown that the irregulars tend to locate in larger centers. It is well to have actual studies and statistics like this so that claims of shortage of physicians advanced with a view of lowering the standard of medical education may be met by statements of facts. It is true that irregulars get some patients from remote districts which should be under the observation and treatment of the local physician. The various cults are proving themselves a menace to the welfare of the public by opposing the informed community serving regular practitioner of medicine and misleading the public by theories in place of facts. Every one of these cults is based on some theory; and it is well known but a deplorable fact that the great majority of people are just as liable to believe a theory as a fact. What the world needs most is more facts and less theory, more principles and less dogmatic assertions of unproven or alleged facts. One of the unfortunate results of the cults is that some mate-

rial is lost to the profession by drifting into the ranks of the "patheis" and various forms of irregular medicine.

PRESENT AND FUTURE OF COUNTRY DOCTORS

The committee on Medical Economics of the medical Society of the State of New York report that in 1913 there was one physician in the state for each six hundred and twenty inhabitants, and now there is one for each six hundred and seventy, a decrease of only eight per cent, and this decrease was more especially noticeable in the rural districts. For some time it has been generally believed the rural physician, the country doctor of history and literature, was becoming less common. In order to determine the facts in the case, C. E. Lively, assistant professor of rural sociology in Ohio State University made an analysis of the statistics of the American Medical Directory for 1921, so far as it related to the State of Ohio. This analysis showed that the seven largest cities of Ohio had one physician for each 571 persons, while in rural Ohio, that is all places under 2500, there is one physician for each 1160 persons. This investigation revealed that the average age of the rural physician was five and one-half years more than the average city physician. The marked age difference between city and country indicate that the country places are no longer receiving their proportionate quota of young physicians. A report of the committee on Medical Education of the American Medical Association in 1923 showed an improvement in undergraduate schools and a steady increase in the students in medical college, which is indicative of the fact that there will be no such shortage of physicians as has been predicted. The present so-called shortage from the above reports is largely a question of distribution. These statistics show beyond a doubt that the younger graduates are locating in the cities leaving the rural communities far short of their quota of recent graduates in medicine. If this condition continues for a few years there will be such an inadequate medical service for rural communities as will almost demand state medicine. The present so-called shortage of doctors in rural districts will be a reality in a few years, unless some means can be devised by which the young men can be induced to enter rural work. Some group of men in the medical profession must be thinking of how this is to be done.

SPECIALISM GROUP AND THE COUNTRY DOCTOR

In the issue of the Journal of the American Medical Association dated January 6th, 1923, John M. Dodson, M. D., of Chicago, says the passing of the family physician is predicted and deplored. Some would seek to restore him by eliminating much or all of the instruction in the specialities restricting the medical curriculum along clinical lines to medicine, surgery and obstetrics; others advocate a curriculum which would deliberately encourage preparation for exclusive devotion to a speciality and provide service for the community by the plan of group practice. The suggestion of eliminating much of the special instruction for the general practitioner of medicine might not prove to be so detrimental to the best interests of the profession and the public, but a curriculum which compels exclusive devotion to some specialty would be detrimental to both profession and public. A specialist turned out from such a curriculum would be very narrow minded and possess a very limited amount of practical information. A specialist of this type would fail in his efforts to discharge the duties and meet the obligations that modern medicine owes to humanity. Specialism of the right sort is a decided benefit to the profession and the public, since it renders a service which was not possible before, and properly used and controlled, greatly increases the service medicine can render to the public. Group medicine is a very modern development. If the members of the profession who form the group are broad minded unselfish men, with a desire of giving an efficient service to the community, and the profession, not connected with the group, they can meet an existing need. It is a statistical fact that possibly more than 20,000,000 Americans are living in rural districts, not accessible to specialist or group practices, since the population is not dense enough to justify the location of specialists or groups. These people must be served by that class of general practitioners known as country doctors. Some men who think of medicine only from the standpoint of surgery and specialism, I feel sure, place a very low estimate on the service rendered by the general practitioner. I feel sure the general practitioner in the rural districts is the only means by which medicine can possibly render its duty and full service to mankind. The recent graduate whose ideals have been largely influenced by the location of medical schools in large centers, does not look with favor on rural life. The big surgeon, the specialist, the limousine are his ideals and desire, more than the fulfillment of the Hippocratic oath. Dr. Frank Billings, of Chicago, in a paper read before the Tri-State District Medical Society at Peoria, Illinois, October 31st, 1922, said: "With due regard for the value and need of all the splendid ultra scientific laboratory and instrumental methods of physical and functional diagnosis in investigatory medical work, they are needed in the routine

clinical care of not to exceed twenty per cent of all the patients of any urban or rural community." Unfortunately many people have been made to believe, and apparently a large number of the physicians, that the routine application of the ultra-scientific methods of diagnosis is necessary in the majority of cases. The fact is that the diagnosis can be made in fully eighty per cent of the cases by resourceful general practitioners. If we will only deliberately consider for a few minutes we cannot fail to realize that practically all curable diseases of the non-surgical class, can be as well treated by a well-informed rural doctor as by any one. Those diseases for which we have no specific can be handled with comparatively good results by the rural doctor in a private home. I know not of a single prophylactic remedy which can not be administered in the office of the country physician. The rural doctor today is the most potent factor in promulgating the facts concerning preventive medicine. The rural doctor of the past as well as the present has been and is the most useful and influential factor in the rural American home. The perpetuation and integrity of the nation is dependent mainly upon the maintenance of family life. The continuance of the family home in the rural districts demands the family physician. The necessity for the preservation of the general practitioner in the rural districts, for the general public good, demands that the organized medical profession devise such means as in the future will provide an adequate number of well-informed men who will be willing to go to the rural districts and deliver such service as the medical profession alone can render.

Some Remedies

There is not a scarcity of physicians today, the trouble is in the distribution. Statistics gathered from a reliable source show that the cities are being over-crowded and the country robbed of its legitimate quota of physicians, and especially is it true regarding the recent graduates and younger members of the profession. What are the appreciable causes of such condition? The schools of the last few years have been dominated by teachers who have attempted to turn out specialities of their own type rather than doctors versed in the broad general principles, viewing their patients as members of human society. The medical education of the recent graduate has been largely influenced by large hospitals equipped with ultra-scientific laboratories and instrumental methods of physical and functional diagnosis. He really feels that medicine can not be practiced elsewhere than in the well-equipped hospital. He should be inspired by the report of the reference committee on medical education, at the last meeting of the American Medical Association, which states that no less than eighty to ninety per cent of all illness can be cared for by the general practitioner and ninety per cent of the cases can be cared for in their private homes. Medical education, in its essence, is to get the young physician to serve his fellow citizens. The physician is the middle man who delivers to an individual patient the result of an accumulated medical lore. His effectiveness is not so much of how great his knowledge and skill is, as how much he makes applicable to his particular patient wherever he may be located. Another cause is the need of such legislation as will enable the medical profession to render to rural, urban and city members of society the best possible service which it is our privilege and glory to render. In the advance of organized society, we have been loyal to our greatest function as personal physician to individuals, neglecting our duties as educators and in directing health legislation. No group of men understand human weakness and needs better than we. The betterment of the public health in many respects can only be through legislation. No state would trust the building of its roads without the advice of a well-informed engineer. No city would undertake to build a structure for public use without consulting a competent architect, likewise no community can afford to trust its health problems to laws made without expert knowledge or to administrators without a training in the medical science. More general dissemination of the facts of medicine and life will lead to a sounder development and at the same time will show the public, the help it can receive from the medical profession as the only group sufficiently trained to advise in such matters. So great has been the advancement in the last few years along scientific lines and otherwise, bringing necessarily changed relationship of the profession to the public, that it has been very difficult to keep our professional bearings in our efforts to meet the existing obligations. I fear that in our attempt to meet our modern obligations and adjust ourselves to a new environment, that we have to some extent, forgotten some of the cardinal principles enunciated by the immortal Hippocrates. It has been said that some of the armies of Latin American Republics tend to be all generals. So it is with the medical profession today, from some cause apparently within our own ranks, too many want to be commissioned officers, and by far too few are willing to be privates on the firing line wherever duty demands. The service of the medical profession can not be efficiently performed by any other agency. But we must perform this ser-

vice so as to make it universal. The concerted advancement of modern medicine implies the brotherhood of man and demands a cosmopolitan spirit. With a view to hopeful advance let the profession of medicine, without jealousy, or thought of self-interest, devote its wisest and most faithful workers as chieftans; let the press, ever ready upon conviction, as earnest and determined associates with unremitting zeal uphold and champion the cause, and add to this the patient and never failing confidence of a liberal and trusting general public, rallying its invincible support, and there shall open up before the coming generation such a prospect of achievement and victory as will be a soul-satisfying record.

ORIGINAL ARTICLES

THE INUNCTION TREATMENT OF SYPHILIS.*

By Edward R. Palmer, Louisville

The treatment of syphilis has undergone many changes since Ricord first systematized it in the middle of the Nineteenth Century, the first notable one being the introduction of the hypodermic method in 1864 by Scarenzio. On account of its extreme painfulness and the frequent liability to abscess, this form of treatment made but slow progress until, in 1893, Bacelli began the administration of mercury biniodide intravenously. This was shortly afterward followed by intra-muscular injections.

The popularity of the two latter methods has increased with rapid strides during the last twenty-five years until at the present time they have practically superseded all others.

Then came Ehrlich's epoch-making discovery and invention of salvarsan. This, at first, promised to revolutionize the entire field of anti-syphilitic therapeutics, but unfortunately for mankind his hope of "Therapia Sterilizans Magna" failed to materialize, it being now acknowledged by practically all prominent syphilographers that this disease cannot be aborted by one or even several massive doses of arsphenamin. While there are still some who claim that syphilis can be cured by this drug alone, the majority believes that mercury is essential to a cure and supplements arsphenamin with mercurial injections or inunctions.

It has always been the opinion of the essayist that there is but one drug, mercury, which actually controls this disease. Note here that I say controls and not cures, for as I have elsewhere (1) emphasized: "If syphilis is ever cured it is not by direct germicidal action of anti-syphilitic drugs but by the natural protective forces of the body to which our drugs are only aids."

Mercury, then, is undoubtedly the best and surest of all anti-syphilitic remedies; the others, arsenic, iodine, sulphur, bismuth and antimony, playing a secondary but important role in the management of this protean affliction.

This being granted, the questions that present themselves to us are: How does it act? What is the object to be attained by its administration? And by what method of treatment can this be best accomplished? For a long time it has been the belief of physicians that its action is directly germicidal; but careful consideration of several points will show the fallacy of that assumption.

In the first place, the maximum amount of mercury circulating in the blood and lymph streams, when the body is thoroughly mercurialized, has been estimated to be one part in a million, which is, of course, entirely too weak to have any direct germicidal action.

Then, its action is not always in proportion to the quantity administered, very small amounts giving the same results in some cases that are only accomplished in others by larger doses.

Again, in the same person in different stages of the disease it acts differently. In active syphilis it not only inhibits the development of treponema and by catalysm hastens their destruction through the antibodies, but also has a solvent or destructive action on secondary syphilitic lesions. In latent syphilis its action is more of a tonic character, regulating and stimulating the antibody mechanism.

To sum up, then, briefly, its many-sided action includes: inhibition of treponema catalysis of antibody antigen action, stimulating and regulating the antibody producing tissues, and destruction of syphilitic lesions.

In order to fully understand the theory of the method of treatment which I am about to lay before you, it will be well at this point to recall to your memories some of the views I hold (2) in regard to syphilis and its method of treatment, which are directly opposed to those commonly accepted.

(1) Syphilis is a chronic disease from the very start, being due to an infection by the treponema pallida which by the time the initial lesion appears are scattered into the utmost recesses of the body, even the central nervous system.

(2) Abortion of this disease by drugs is an impossibility, because they do not act as direct germicides, but as stimulants of the antibody mechanism.

*Read before the Jefferson County Medical Society.

(3) Therefore treatment should not be begun until this mechanism is in full action.

(4) The first evidence we have of this is the development of a frankly positive Wassermann reaction.

(5) Instead of treatment being directed against this reaction and an attempt being made to prevent its occurrence, it should be waited for and treatment be begun only when it is strongly positive.

(6) Thereafter the Wassermann reaction should be ignored, as neither a positive or negative has any significance as to the efficiency of treatment or evidence of a cure.

(7) We have no absolutely reliable evidence or test of the curability of syphilis.

(8) However, careful, methodical treatment, over a long period of time, will in the vast majority of cases render the disease harmless to the host and non-transmissible to his future wife and children.

The object to be attained with mercury is, first, as soon as the Wassermann becomes strongly positive, to get the disease under control as quickly as possible so as to cause a prompt resolution of the granulomatous infiltrates, and then by carefully gauging its action to the individual case to so stimulate and regulate the antibody mechanism as to lead to a gradual and if possible complete elimination of treponema. The time to begin administering it is determined by the development of a positive Wassermann reaction or the appearance of secondaries.

The best method, in my opinion, is by inunction of mercurial ointment alternated with periods of internal medication, the remedies used internally depending on the chronological stage of the disease. Each case must be studied and treated individually, but certain general principles can be formulated upon which may be based a scheme or system of treatment.

Syphilitic cases are divided by Marshall (3) into three general classes, according to the character of the reaction of the defensive mechanism to the treponema:

(1) Those in which the defense is strong, which run a mild course, or are even spontaneously cured, requiring but little treatment.

(2) Those with weaker defense, more marked reaction, requiring energetic treatment.

(3) Those with very poor defense who not only fail to respond to energetic treatment but even grow worse under it.

It is impossible to differentiate between the first two classes or predict which one will be mild; consequently it is safest to consider all as being of the second class, giving them energetic treatment extending over a period of at least three years. Some few will fail to respond. They belong to the third class, and as such all anti-syphilitic medication has to be stopped, tonics and reconstructives resorted to with an attempt to build up the physiological resistance, for not until that is accomplished can our anti-syphilitic treatment do any good.

With these general introductory remarks we are prepared to describe our plan of treatment: The year is composed of fifty-two weeks, i .e., four quarters of thirteen weeks each. In the first year we have four courses of inunctions alternated with four courses of internal administration of mercury. The patient is stripped, his body laid off into areas, care being taken to avoid hairy parts. Thus:

Area No. 1, the back,

Area No. 2, right side of abdomen, chest and upper arm,

Area No. 3, left side of abdomen, chest and upper arm,

Area No. 4, the back again,

Area No. 5, right buttock and thigh,

Area No. 6, left buttock and thigh.

I give two inunctions in the week myself, taking the back each time; the patient gives himself four using one after another of the indicated areas. Each seance lasts twenty minutes. The preparation used is fifty per cent mercurial ointment in gelatine capsules each containing two drams, i. e., sixty grains of metallic mercury. The first course lasts seven weeks, six days rubbing and one day rest each week. It is rare, however, to be able to rub so much at first.

The individual tolerance to mercury varies greatly. Some can rub the maximum with impunity getting only the slight physiological tenderness of the gums and metallic taste; some get the same result with four rubs; some with three, and a few even with only two per week. Beyond the slight "touching" of the gums it is not desirable to go, and whatever the dose that accomplishes this, be it six per week or only two, if the disease is not controlled it is because the case belongs to the unfortunate third class in which the physiological resistance is so poor that anti-syphilitic drugs are powerless.

At the end of seven weeks a week rest is given. Long before this time practically all signs of the disease have vanished: the initial lesion heals in a few days, the induration rarely lasting more than two weeks; secondary skin lesions rapidly fade, and mucous patches heal. All that remains may be slight enlargement of the neighboring lymphatics: but in most cases even these have undergone resolution. The effect of that Great-Winged-God, MERCURY, is so truly marvelous that I have often wondered why our modern syph-

ilographers have been led to worship at the shrine of the New-God, SALVARSAN.

After the first week of rest the patient is placed on internal mercury for four weeks. My preference is for Hutchingson's grey powder—mercury and chalk—freshly made into pills of one-half grain each. My reason for the use of this is the belief that mercury acts in the tissues as metallic mercury. It is a colloid acting on colloid as a catalyst. Catalysts are always colloidal in structure. That is also the reason why in inunctions the officinal ointment is vastly superior to calomel or any other substitute.

The patient begins with three pills a day gradually increasing until he is taking enough to maintain the slight tenderness of the gums. A rest of one week now ends the first quarter. The second and third quarters are repetitions of the first.

In the fourth quarter our inunction course is six weeks with a two weeks' rest; then four weeks of mercury and chalk and one week rest. Thus in our first year the patient has practically been continuously under the influence of mercury.

In the second year we make our first change in treatment, Donovan's solution being substituted for mercury and chalk. This is a very powerful remedy composed of the three alteratives, mercury, arsenic and iodine; it acts especially on the skin and central nervous system, and it is in this period of the disease that these tissues are likely to be affected.

First quarter, then, six weeks inunctions, two weeks rest; four weeks Donovan's solution, one week rest.

Second quarter, same as the foregoing.

Third quarter, five weeks inunctions, three weeks rest; three weeks Donovan's solution, two weeks rest.

Last quarter, same as the foregoing.

We have now reached the third year of treatment, and in order to understand the remedial measures resorted to it will be necessary to consider briefly the pathology of so-called latent syphilis. The term latent is a misnomer in that it signifies quiescence. The investigations of Warthin (4) have demonstrated that though there are no external or internal symptoms of the disease, in the vast majority of cases treponema will be found in more or less scattered areas in practically all the viscera, even the central nervous system. Wherever treponema are proliferating there is an accumulation of granulomatous tissue, often microscopic in size, composed of lymphocytes and plasma cells. These cells have a tendency to undergo transformation into either connective tissue, thus giving rise to interstitial fibrosis as exemplified in posterior spinal sclerosis and hepatic cirrhosis, or a caseous necrosis with formation of gummata. Usually there is a combination of both changes. We may look upon this as the pregummatous stage, these syphilitic infiltrates being potential gummata of either the diffuse or circumscribed type.

How are we to account for this state of affairs? Why does the body, after waging a most strenuous battle against the invading micro-organisms, when about successful, apparently give up and allow a few of these parasites to establish a permanent habitat from which they may break out in later years with disastrous results? Why does this occur sometimes even in spite of thorough treatment and an adequate production of antibodies as endorsed by a strongly positive Wassermann reaction?

Herb's theory of focal infection seems to me the most plausible explanation. From his writings I will quote extensively. He says: "The usual explanation given for this failure is that the specific antibodies do not reach the microbes on account of the existing infiltration or exudation. This explanation seems, however, hardly acceptable. If there is enough circulation to bring sufficient nourishment and carry off the waste to keep the tissue alive, there is enough circulation to carry the specific antibodies to the microbes themselves The fault can, therefore, not be with the ferments, but must lie with complement. All protein split products have a great affinity for complement and absorb or fix it eagerly. Wherever microbes settle, digestive split products form and accumulate in surrounding tissues. Whether these split products originate from the host's own tissues, in consequence of the activity of microbes or from disintegrating microbes themselves, they fix complement. Thus a zone of inhibition is formed around the site of any microbic settlement, in which completely harmless to the germs or they are Under such circumstances pathological foci are established. No matter how many antibodies attain the microbes they are inert and completely harmless to the germs of they are deprived of the necessary complement in this zone of inhibition before they reach the infecting foes."

Now, complement is, I believe, essential not only for the action of antibody but also for that of the blood ferments by which autolysis of granulomatous and necrotic gummatous tissue is brought about. So we must now employ measures which will so act on these protein split products as to prevent their fixing complement.

For many years potassium iodide has been recognized as a specific for late syphilitic lesions, causing them to melt away with great rapidity. It is generally believed to have a

solvent effect and is used more or less empirically against all inflammatory exudates.

Investigations of Joblin and Peterson (6) have shown that iodine has an affinity for unsaturated fatty acid radicles which are products of protein cleavage due to microbic activity. Iodine then acts by combining with these, thus preventing the fixation of complement. Antolysis of the syphilitic infiltrates takes place and free access to the embedded treponema is given to both complement and antibody. Iodine has no direct action on the treponema or the antibody mechanism, so we are scientifically justified in always combining mercury with it in our treatment.

With these explanatory remarks we are ready to describe the last year's treatment. We start the first quarter with one week of treatment prescription which contains 1-12 grain bichloride of mercury and five grains potassium iodide to teaspoonful of compound syrup of sarsaparilla, followed by two weeks of rest.

In the second quarter the only change is limiting our injections to four weeks; thus, one week injections, two weeks injections and potassium iodide, one week injections alone, then three weeks injections alone, then three weeks injections in conjunction with saturated solution of potassium iodide, beginning with five drops three times daily, gradually increasing to thirty, or until symptoms of iodism develop. It is unnecessary to go beyond this in ordinary cases. Then comes one week injections alone. This is followed by three weeks rest. Next we give for three weeks the old standard mixed

OUTLINE OF ROUTINE PLAN OF THE INJECTION TREATMENT OF SYPHILIS

FIRST YEAR

1st quarter
7 weeks injection
1 week rest
4 weeks mercury and chalk
1 week rest

2nd quarter
7 weeks injection
1 week rest
4 weeks mercury and chalk
1 week rest

3rd quarter
7 weeks injection
1 week rest
4 weeks mercury and chalk
1 week rest

4th quarter
6 weeks injection
2 weeks rest
4 weeks mercury and chalk
1 week rest

SECOND YEAR

1st quarter
6 weeks injection
2 weeks rest
4 weeks Donovan sol.
1 week rest

2nd quarter
6 weeks injection
2 weeks rest
4 weeks Donovan sol.
1 week rest

3rd quarter
5 weeks injection
3 weeks rest
3 weeks Donovan sol.
2 weeks rest

4th quarter
5 weeks injection
3 weeks rest
3 weeks Donovan sol.
2 weeks rest

THIRD YEAR

1st quarter
1 week injection
3 weeks injec. and K. I.
1 week injection
3 weeks rest
3 weeks mixed treatment
2 weeks rest

2nd quarter
1 week injection
2 weeks injec. and K. I.
1 week injection
3 weeks rest
3 weeks mixed treatment
3 weeks rest

Last half third year
1 week injection
2 weeks injec. and K. I.
1 week injection
4 weeks rest
3 weeks mixed treatment
4 weeks rest
3 weeks mixed treatment
4 weeks rest
1 week injection
2 weeks injec. and K. I.
1 week injection alone.

three weeks rest, three weeks mixed treatment, and three weeks rest.

The last half of the third year; inunctions one week, inunctions and potassium iodide two weeks; inunctions one week, four weeks rest; three weeks mixed treatment, four weeks rest; three weeks mixed treatment, four weeks rest. Then a final course of inunctions; one week inunctions alone, two weeks inunctions and potassium iodide, one week inunctions alone. This completes the course.

The patient is now instructed to report monthly for observation. At the end of six months he is advised to take a four weeks course of inunctions and potassium iodide, then again six months observation. After this he is told it is unnecessary to take further treatment, and to report occasionally. Having been kept under observation five years with no relapsing symptoms in at least the last two, he is informed that as far as can be said he may consider himself well.

Such is the plan of treatment which I have developed during the last twenty-seven years. In looking over my records I find my patients have been remarkably free from late recurrences. Some few have required more than three years to master their disease. In only two instances has neurosyphilis developed, both being paresis. One patient began drinking heavily immediately after three years of treatment. Two years later he developed brain syphilis and died. The other responded to treatment badly from the start. However, he apparently became well, married, and had a healthy child. About ten years after treatment, while in a distant city, he began seeing double. He was advised to take anti-syphilitic treatment but failed to do so. He is at present a hopeless paretic in Lakeland. I have never had a case of locomotor ataxia to develop, nor optic or auditory nerve involvement.

I have record of one case in which the patient was peculiarly intolerant to potassium iodide, intense coryza, salivation, edema of eyelids and mouth following its ingestion. He developed a gumma of the soft palate which resulted in perforation. The only way I could succeed in controling it was by giving the iodide at bedtime. He would awaken in the morning, his pillow saturated with discharge from nose and mouth, his eyes closed and mouth swollen, feeling as though he had been on a drunk. Under this heroic treatment he promptly recovered and has remained well ever since.

In cases of late recurrence I advise at least an additional year's treatment of inunctions and potassium iodide, and mixed treatment. I could cite many cases which have gone fifteen to twenty-five years absolutely free from symptoms, enjoying the very best of health, some married and fathers of healthy, robust children.

From this experence I feel justified in stating to anyone who comes to me for this disease, that if he will follow the treatment carefully, obeying all instructions and for the rest of his days abstaining from excesses, especially alcohol and tobacco, that the chances are ninety-five in one-hundred that he will never hear of his disease again; that five years from the date of his last symptoms, in the last two of which no treatment has been given, he may marry with the assurance of a long, healthy and happy life, the closing years of which will be cheered by the smiling face of a devoted wife and the helping hands of happy, healthy children.

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DISCUSSION

Wm. J. Young: I would like to make the statement first of all that I regard mercury as the sheet-anchor in the treatment of syphilis, and I believe this is the consensus of opinion of syphilologists everywhere.

I agree with Dr. Palmer concerning the Wassermann reaction. When the fact has been established that the patient has syphilis, the Wassermann reaction may as well be forgotten. We do not now regard the Wassermann as anything else but an adjunct in the diagnosis of syphilis. We know that a four-plus Wassermann is diagnostic of syphilis, but a negative reaction may do nothing but get us into trouble. One of the main difficulties today concerning the question of syphilis is that the average man takes the Wassermann too seriously and is inclined to overlook clinical symptoms.

In my judgment a Wassermann test on the spinal fluid should always be made before anything is said about a so-called "cure." Moreover, a Wassermann ought to be made at the end of the first period of treatment. The information thus secured is of value as a guide to further treatment.

I also agree with Dr. Palmer that arsphenamin does not cure syphilis, it is used for an entirely different purpose. Arsphenamin is used in the symptomatic treatment of syphilis. I think anyone who uses arsphenamin will agree that its value lies in the symptomatic treatment of syphilis. There are times when results cannot be se-

cured with mercury or potassium iodide but results can be secured with arsphenamin.

Another point mentioned by Dr. Palmer which I think is of the utmost importance, i. e., we should never forget the fact that we are treating a human being and are not merely treating syphilis alone. Each case represents an individual problem and we must remember that in most cases the health of the patient is seriously impaired; in other words, we cannot push the treatment at times in the way we would like owing to the fact that the patient's health will not permit. The physician who forgets this point is apt to get into serious trouble.

The essayist laid considerable emphasis on the fact that the action of alcohol interferred with the treatment of syphilis. I cannot understand why alcohol should have any more effect on the treatment of syphilis than any other chronic disease. This idea probably originated in the olden days when gonorrhea and syphilis were presumed to be intimately related to each other, and as the deleterious effect of alcohol in gonorrhea was well known and understood, the conclusion was quite natural that it was equally detrimental in syphilis. I see no reason why there should be any effect from alcohol in syphilis than there would be in any other chronic disease, and personally several years ago I made a test of this, i. e., where the individual was in the habit of imbibing whiskey he was allowed to continue doing so during treatment for syphilis and no deleterious effects were observed

In regard to the treatment of syphilis: I do not agree with Dr. Palmer, and there are probably few syphilologists who do agree with him. There can be no question, however, that the inunction method of using mercury is a very good one. I do not see why Dr. Palmer should ignore the fact that Ehrlich has presented arsphenamin to us, which unquestionably represents one of the greatest advances ever known in the treatment of syphilis. Arsphenamin stands next to mercury. There are two things which arsphenamin does and both are very essential. First, it overcomes the infection. For example: take a patient with syphilis, a four-plus Wassermann, where spirochaetes can be demonstrated in the primary lesion, we can render that patient "non-infectious" with a few doses of arsphenamin. When I say overcome the infection I mean that we can render the patient so he is not likely to infect others with syphilis. This cannot be done so promptly by the slower treatment with mercury, whether by inunction or intravenous injection. Second, arsphenamin controls the symptoms of syphilis. Of course I realize, and I think the most of us do who treat many patients for syphilis, that we do not know just what we are doing and we have to be governed not by hypothetical questions but by our clinical results.

There is no question that by the use of arsphenamin in the symptomatic treatment of syphilis we are getting results which cannot be secured with mercury alone. About four years ago I took twenty patients with syphilitic infections of the eyes and treated them with arsphenamin, I also took twenty more and treated them with mercury. Those treated with mercury salicylate obtained very little benefit. Those treated with arsphenamin immediately began to improve; and I want to say that the eye findings were carefully made by a competent ophthalmologist. The twenty patients treated with arsphenamin were then given mercury, and at least fifty per cent of them began to lose ground. When arsphenamin was resumed they again improved. From the clinical aspect, therefore, unquestionably arsphenamin is the most valuable remedy known for the symptomatic treatment of syphilis.

The approved plan of treatment today consists in the administration of arsphenamin and either soluble or insoluble salts of mercury. The usual routine is six injections of arsphenamin and twelve to fifteen of mercury at weekly intervals, then giving the patient four or five weeks rest, thus making the course of treatment twenty-five weeks. This treatment is repeated three times. If at the end of that time the patient exhibits no clinical evidence of the disease he is pronounced clinically cured. However, we never pronounce a man clinically cured until spinal puncture has been made and the fluid examined. We know that the Wassermann reaction is not the wonderful guide to treatment it was formerly believed to be, and if at the end of the three series of treatments even if the Wassermann remains four-plus if all clinical evidences of the disease have disappeared we consider the patient clinically cured. As a precautionary measure, however, we usually give the patient an additional series of treatment, because there is no method known by which we can determine that the patient is actually cured of syphilis. By this method of treatment I believe, and it also seems to be the opinion of the majority of syphilologists, that we are getting better results than were ever secured by the older plans of management. When mercury is administered by the intravenous or intra-muscular route, whether soluble or insoluble salts are used, it is promptly absorbed by the system and we know the patient has received just that much mercury, so we feel that we are doing better work.

I do not know much about the inunction method of giving mercury, but I believe Dr. Palmer is a little too optimistic in his views. He states that he does not see any neurosyphilis following the inunction method of treatment. The observation is interesting, in this connection, that we see a great many patients in our clinic at the Louisville City Hospital with locomotor ataxia and paresis who according to the history obtained had been treated by inunctions of mercury. It is only fair

to state, however, that patients also come to us with these manifestations who had been treated with arsphenamin and intra-muscular injections of mercury.

There is only one thing to be said against arsphenamin, i. e., it causes the symptoms to disappear so rapidly that a false sense of security is produced in the mind of the patient, as there are no longer any clinical signs he feels that he is well and unless he can be controlled will not take further treatment after getting two or three arsphenamin injections, such a patient a few years later may develop neurosyphilis. This is not the fault of arsphenamin, it is because the patient could not be kept under control and treated for a sufficient length of time.

J. D. Allen: While I used to think Dr. Palmer was somewhat erratic in his views, I have come to the conclusion that his method of handling syphilis is better than the new form of treatment. Observation has shown that neurosyphilis may follow either plan of management. When the Wassermann reaction becomes negative following the inunction treatment it invariably remains negative and the patient thereafter shows no clinical symptoms; whereas after the administration of arsphenamin, while the Wassermann reaction becomes negative promptly, after the lapse of a few months or a year the patient returns with a positive Wassermann.

The important fact must not be overlooked, in speaking of the Wassermann reaction in connection with syphilis, that we do not know what we are testing for; we do not know what the Wassermann reaction is; we do not know what there is in the blood of the patient that gives a positive Wassermann reaction. Dr. Palmer spoke of it as an antibody, but it is not for the simple reason that the presence of spirochaetes will not give a positive reaction except in a small majority of instances. It is a product of true autolysis. The antigen used in making the Wassermann test must combine with colloid substances, but what the origin of these substances is we do not know. If it is an antibody why is it that a positive Wassermann does not obtain after the cure of syphilis? We know that most infections confer an immunity which will remain for some time following cure of the disease. So far as is known that is not the case in syphilis for the Wassermann reaction remains negative when the patient is cured. Therefore it is not antibody. What the origin of this substance is we do not know. Possibly it is a substance not elaborated by the host but by the spirochaetes.

Neither Dr. Palmer nor Dr. Young seem to place very much confidence in the Wassermann reaction as an index to the treatment of syphilis, as they both said they would discontinue treatment in the face of a four-plus Wassermann. I would like to have Dr. Palmer say something further about this feature in closing the discussion.

I agree perfectly with the statement that having five or six Wassermann examinations made during the period of a year in syphilis is altogether uncalled for and unnecessary; but if the Wassermann is used as an index to treatment, why do they discontinue when the patient blood or spinal fluid shows four-plus? What gives a positive Wassermann is not well understood, but I believe it is an index to the patient's resistance.

In regard to intensive treatment by the newer plans: My brother and myself recently had a case under observation which may be worthy of mention: A man about nineteen years old came to us with what might be termed a very malignant syphilis. He had been treated by two genito-urinary specialists in Louisville according to the intensive plan, i. e., he had been given eight or ten doses of arsphenamin and quite a number of mercurial injections. When first observed by us the man was in serious condition physically and his blood Wassermann was four-plus. Arsphenamin was discontinued and the patient was given small doses of mercury by inunction, by his physician. Within two months his Wassermann was negative and he had gained twenty-five pounds. He still has a negative Wassermann and is in fine physical condition. This seems to confirm Dr. Palmer's idea that the old method of treatment is sometimes more effective than the newer plans. Drugs administered in syphilis do not kill the spiro-chaetes, they simply stimulate antibody activity against the invading organisms.

W. E. Gardner: I recall having seen Dr. Palmer treat a large number of patients for syphilis twenty-one years along lines somewhat similar to that he has described in his paper; and I know a dozen men going about the streets of Louisville now, who were treated about that time, and who are perfectly well. They have never manifested any signs of neurosyphilis and most likely never will. They are strong, healthy individuals pursuing gainful occupations.

For these reasons I want to testify to the efficacy of the methods Dr. Palmer has described.

Edward R. Palmer (closing): It has long been my object to present this method of treating syphilis before you, because most of you seem to have the idea that I am treating it in the way that my grandfather and great grandfather did many years ago. That is not the case. In the early days I can remember that my father and R. W. Taylor used to give about eighteen months of treatment.

The treatment of syphilis has undergone many interesting changes during the last thirty years. The greatest surprise that came to me was when Ehrlich devised his wonderful scheme, which was quickly adopted by almost the entire medical

profession, by which it was presumed syphilis could be cured in ten minutes. The whole trend of my experience has been that syphilis should be treated, as Dr. David Yandell used to say "internally, externally and eternally." I do not know whether the disease is ever cured, but believe it is in the majority of instances under the plan I have outlined. However, as I have stated many time before, syphilis is not cured by the germicidal action of drugs. It is my firm belief that the human body is endowed with its own mechanism to overcome every form of disease, and that this mechanism is the production of antibodies.

In regard to the Wassermann reaction: Dr. Allen misunderstood me as to its interpretation, as he inferred that I began treatment only when the reaction was positive and that I would discontinue treatment after repeated negative reactions. The truth of the matter is that I look upon the Wassermann as simply a confirmatory aid in the diagnosis of syphilis. A patient came to my office today with syphilis in the florid stage, with a secondary eruption all over his body. It is absolutely unnecessary to make a Wassermann test in such a case, it would be simply throwing away time and money. He was placed on inunction treatment immediately. To my mind a positive Wassermann simply means that at some time or other in that man's life he has had syphilis. I do not believe that the degree of the Wassermann reaction necessarily indicates the number or activity of the treponemata. If the Wassermann were an indication of the degree of the infection, then it should always be in accordance with the degree, and we know that is not true. I wrote a paper two years ago in which this point was emphasized. If the Wassermann reaction were an index as to the number and activity of the spirochaetes, then all individuals in the same stage of the disease should show the same degree of strength of the Wassermann reaction. That is not the case by any mans. This reaction is a very uncertain and unreliable guide for treatment. For instance, we may have a patient with active, florid syphilis and yet the Wassermann reaction may be negative. We may have a case of severe syphilis with rupial syphilides indicating weakness of the protective mechanism of the patient's body, where the symptoms are marked and persistent, and yet there will be a negative Wassermann reaction.

The following remarks will answer Dr. Young's question in regard to the use of alcohol by syphilities. Craig has shown that when alcohol is imbibed in fairly large quantities it will render a positive Wassermann negative. We know that a syphilitic who uses alcohol has a tendency to frequent recurrence of symptoms. Why is that? If a syphilitic has a number of active spirochetes, and if the positive Wassermann is an indication of spirochaetal activity, the reaction ought to be positive despite the presence of alcohol. On the other hand, if the Wassermann is simply a physiological reaction for the disease we can explain the negative very easily.

The Wassermann reaction does not become positive until antibody formation has become established. The substance detected by the Wassermann is simply lipoid globulins; these are always found in the blood, and the only difference between the blood of a syphilitic and a normal individual is that there is an increase in the lipoid globulins, and it is that increase in lipoid globulins that the test detects. It is McDonangh's belief, and the one I have always followed, that these lipoid globulins which are detected by this reaction are the substances from which the antibodies are made. His idea, which I have mentioned before this society on previous occasions, is that there is but one protective mechanism in the body for each and every micro-organism. The body could not be expected to go to the enormous trouble of manufacturing new complex substances like antibodies for every germ that might attack it. There is but one substance for protection of the body and that substance is complement. This complement is the protecting mechanism of the body against germ invasion. To my mind complement is also essential to the action of the blood ferments; in fact, complement itself is a ferment; it is the ferment which does the scavenger work of the body; it is the ferment which attacks micro-organisms; it is the ferment which acts on granulomatous tissues of the body causing them to undergo autolysis by digestive processes. Complement, then, is the digestive ferment in the blood that protects the body against all kinds of foreign substances. Ferments as we know are specific in character; they act only on substances of a definite kind. Take for instance the digestive ferments of starch, fat, protein, etc.; in digestion we have a special ferment for the different substances to be acted on; but in the body itself, in the blood stream and in the tissues, nature is more economical, she has but one ferment and that is complement. Now, that being the case, insomuch as this ferment has so many varieties of substances to attack, how is it going to do it? It is done with the aid of lipoid globulins. Complement itself is a lipoid globulin and oxygen-carrying ferment; it acts by oxidation and hydrolysis. In order to act on these various things it has to adapt itself to them by rearranging and building its own molecular conformation to correspond to that of the substance it is to attack. So we start on the question of the real chemistry that is going on in the tissues. Complement, a lipnoid substance, has the property of absorbing from the blood stream lipoid globulin and rebuilding itself until its structure has a stereo-chemical and molecular configuration homologous with the lipoid globulin of the substance which it is to attack. The reason that alcohol is harmful and the reason

that we get a negative reaction from alcohol is because it acts directly opposite from the medicines that we use. Mercury and other anti-syphilitic drugs act by stimulating the antibody mechanism. As a result lipoid globulin is discharged from the lymphocytes into the blood stream. Alcohol prevents the protein cleavage, which is essential to the formation of lipoid globuling, so it acts in an opposite direction from antisyphilitic drugs and is therefore harmful. It is also harmful in gonorrhea and similar diseases; it lowers vital resistance and does harm in that way; it is especially harmful in syphilis because it prevents the lymphocytes and other cells of the body from breaking up their protoplasm and discharging it into the blood stream in the form of lipoid globulin.

Everybody asks me when I am discussing the treatment of syphilis why I "do not take a crack at arsphenamin." I have never done so heretofore but believe I will take a chance on it now. Ehrlich made the statement in 1910 that arsphenamin (606—salvarsan) was going to cure syphilis with one huge dose; that it was a direct spirochaeteeide; that he had discovered a marvelous remedy; that it was based on that beautiful side-chain hypothesis in which he pictured micro-organisms with hypothetical arms having certain chemical attractions, etc. His idea was that he was going to manufacture a poison, that would be absolutely harmless to the host but through its chemical affinity for the protoplasm of the parasites would destroy them. He thought he had accomplished this with his famous remedy "606." At the very start I contended that he was wrong in his conclusions. I had gradually gotten away from the idea that it was the direct action of drugs which produced a cure, and that practically all diseases were cured not by drugs but by the internal mechanism of the body and that drugs were simply aids to this protective machinery. Developments during the last thirteen years have proven he was mistaken.

Why do I not use arsphenamin? I may answer this by asking why should I use it? Based on the records of cases treated is there any reason why I should discard the older method which has been eminently successful for one that is new and one that physicians are steering further and further away from every day? Have they not all acknowledged that without mercury there is no hope of curing syphilis: that arsphenamin does not cure syphilis; that it is purely a symptomatic remedy; that it has no other purpose. In the practice of medicine it is my habit to look to the welfare of my patient first, last, and all the time; my object is to handle that patient in a way that will be productive of the most benefit to him, not necessarily so that he will not be a menace to the public. That is something for the general health officers to do. The patient comes to me not for the purpose of keeping him from infecting the public, but he comes to me for the purpose of having me conduct his case so not only will he be symptomatically clean but if possible permanently cured with the least possible harm done to his tissues. That has been the object of my treatment.

So far as a remedy is concerned which will cause the symptoms of syphilis to disappear: I think if those of you who handle these cases would use mercury, and use it rationally and properly, you would find its effect is just as rapid and just as marvelous as the effect of arsphenamin. I can see no reason for using this drug considering the results that I have secured with mercury, but find some very substantial ones why I should not. It is merely a repetition of the story of the treatment of gonorrhea. We have long since gotten away from the idea of treating gonorrhea symptomatically. I do not care whether the disease persists two weeks, two months, or six months, just so long as I can treat the patient successfully with the least possible damage to his urethra, prostate and seminal vesicles. It takes me two or three times as long to cure gonorrhea as it did my father. This is because we now have a better idea of the pathology of gonorrhea and the effect it has on the tissues, and the effect of the treatment that was used in the older days. As I have said, then, we are going through in the modern treatment of syphilis just the same thing we did years ago in the treatment of gonorrhea, i. e., we are getting rid of the symptoms quickly but this is done at the expense of internal organs of the body. You must remember that the external symptoms of syphilis are merely reactions of the tissues of the body to the disease, and if by the administration of drugs you eliminate the symptoms too rapidly you are doing so at the expense of vital organs of the body. The skin is an excretory organ and its function is to get rid of certain waste or poisonous products formed within the body tissues. It is better to have the skin bear the brunt of the blow than the liver, the arteries or the central nervous system. That is the main point against the use of arsphenamin.

As regards the action of arsphenamin: It acts similar to mercury. It is a catalyst, it is not a parasiticide, nor is mercury. I do not mean that these drugs will not kill the treponemata, they are perfectly capable of doing so if they could be used in sufficient strength; but these drugs cannot be introduced into the body strong enough to kill the micro-organisms without killing the body first. So if arsphenamin is not a germicide it must act in a manner similar to other drugs. It acts through the antibody mechanism. That being the case I am asked why I do not use it? How does it differ in its action from mercury? McDonaugh has made a careful study of this point, although he advocates the use of arsphenamin; he will awaken some of these days and find he is wrong too. McDonaugh has shown that if you will examine the plasma cells

and the lymphocytes in syphilis before treatment you will find that the protoplasm is coarsely granular; that these coarse granules are zymogens of the substances which when discharged into the blood are the lipoid globulins that give rise to the Wassermann reaction and out of which, as I have said before, the antibodies are manufactured. Now after the administration of arsphenamin if you will examine this protoplasm microscopically you will find that the granules instead of being coarsely granular have been broken up into very fine particles. A physical change has taken place, the coarse granules have been broken up into smaller particles, and if still further watched they will eventually disappear. At the time of their disappearance if the blood be examined you will find that if beforehand the Wassermann reaction was negative it will now be positive, or if it was weakly positive it will be strongly positive. In other words arsphenamin has caused the lymphocytes to discharge their zymogens into the blood stream. So far so good. It has done just what mercury will do.

The whole modern theory of the treatment of syphilis is based on information afforded by the Wassermann reaction which is used as an index. We are told treatment should be continued so long as the Wassermann remains positive, and when the Wassermann becomes permanently negative treatment may be discontinued as the patient is well. In other words the advocates of arsphenamin are taking the Wassermann reaction as an index to the activity of the spirochaetes, and when they have succeeded in making this reaction negative, then, according to their ideas, they have done so by killing the spirochaetes. As I have shown in another paper the negative Wassermann reaction that results from the administration of arsphenamin has no relationship whatsoever to the spirochaetes; it does not mean that a single spirochaete has been killed necessarily. McDonaugh has shown that the first effect of arsphenamin is to cause the discharge of pre-formed substances into the blood, and this may either increase a positive reaction, or may make it positive if negative. Now if arsphenamin be continued still further changes by catalysis occur; besides the physical change with discharge of this substance into the blood stream, the action of arsphenamin now becomes chemical, causing the lipoid globulin to undergo hydrolysis and oxidation splitting up into amino—and fatty acids and making a negative Wasserman reaction. So the negative Wassermann reaction coming from arsphenamin is due to the fact that it actually destroys these substances out of which nature has tried to make material with which to overcome treponema. So I believe the ultimate effect of arsphenamin is harmful. If arsphenamin administration is not supplemented with mercury syphilis is prone to recur. The recurrences after arsphenamin treatment are much more common and much more severe than after mercury. It has been demonstrated, I believe, that patients treated by arsphenamin alone are more likely to have recurrences than those treated by the old method. Of course each recurrence means greater tissue damage. It is my belief that arsphenamin checks the production of antibodies, cripples the mechanism with which the body fights disease, and as a result of this recurrences follow. These do not correspond to the chronological stage of the disease, but to the time at which you attempt to abort it; the man who has a recurrence may have secondary lesions six months, a year or two years after the administration of arsphenamin. In other words, the body has never been allowed to establish a protective defense against this infection. As arsphenamin cripples the natural defense of the body its administration is harmful.

In syphilis we should employ measures which will stimulate and regulate the normal mechanism of the body and improve its tone.

TUBERCULOSIS OF THE HIP JOINT.*

By M. H. Walker, Owensboro

Tuberculosis of the hip joint is commonest in children but it may arise in adults of advanced years, about 60% of cases arise in children under 10 years of age about 80% of cases arise before 20 years of age. Traumatism and cold may be predisposing causes.

Symptoms: The symptoms of incipient tuberculosis of hip joint are slight and may be overlooked entirely, in a child there are night terrors and on getting up in early morning the child shows no lameness, but a limp develops during the day and the child grows tired, spasms are noted, pains may be complained of at night, in the hip or at the inside of the knee as the disease progresses more positive symptoms are observed, the limp grows worse the hip muscles grow more rigid the hip is broadened by an effusion into the hip joint, the hip muscles atrophy, the extremity is pushed forward the patient tilts the pelvis so as to rest his weight on the sound limb.

Diagnosis

1st. Careful family history; the diagnosis which is very difficult in incipient cases is very easily made in well established cases. Undress the patient, inspect the hip, very carefully try all the movements belonging to the hip joint to detect any limitation, look for swelling and muscular wasting, feel if the femur is enlarged, and determine if motion produces pain. Prognosis if seen early with proper treatment

*Read before the Daviess County Medical Society.

in children the prognosis is good, the longer the duration of the disease and the older the patient the more unfavorable is the prognosis, it takes many months to arrest the disease. Complications: Complications may be many, Abscess, Tubercular Meningitis, Pulmonary Tuberculosis. Treatment in Incipient cases: the treatment consists, in rest, place the patient upon a solid mattress and apply extension, in children use a weight from 3 to 5 pounds, apply the extension in the long axis of the limb, the extremity being placed in the line of the deformity if the spine is depressed on the effected side abduct the limb, the object of the extension is to overcome muscular spasm, and put the parts at rest, muscular spasm plays a great part in destroying the diseased parts, muscular spasm presses the parts together and as a result of pressure plus bacterial action destruction occurs.

The extension and traction tires out the muscles and causes spasm to cease, extension will remove flexion in 2 or 3 weeks, extension when seen in cases early must continue for 3 or 4 months, after symptoms have disappeared and in severe cases longer, the weight is gradually taken off if symptoms recur, the weight is reapplied, if they do not recur apply a traction splint or a plaster cast. Put a high heel shoe on the well limb and put the patient on crutches, send him out in the open air, give tonic and rich food. The plaster paris dressing seems to be the most favorable dressing and it is applied from the toes up and includes the entire extremity and pelvis. If an abscess forms, incise it with the most thorough antiseptic care, drain and irrigate the cavity with normal saline solution, inject with iodiform emulsion antiseptically. If this method fails drainage must be employed.

UTERINE FIBROMA WEIGHING THIRTY-FIVE POUNDS. CASE REPORT.*

By Charles Farmer, Louisville

The following case is considered worthy of record because of the unusual size of the tumor. Seldom do we see at the present day abdominal tumors which reach such huge dimensions; patients are usually subjected to operation before tumors have attained any considerable size.

Four weeks ago, while holding a clinic at the Louisville City Hospital, I was told a patient with a large ovarian cyst would be brought into the amphitheater for operation. I had not seen the woman previously. Instead of an ovarian cyst the tumor proved to be a very large uterine fibroma. Operation was rather difficult because the tumor was adherent to the parietal peritoneum in front; for that reason we could hardly determine when the cavity had been entered.

Under the supposition that the diagnosis of ovarian cyst was correct, my incision was made between the umbilicus and pubes; but on discovering that the tumor was a fibroid, the incision was extended upward nearly to the ensiform cartilage. On account of the tremendous size of the tumor the operation was attended with considerable difficulty, but was finally completed and the patient returned to bed in fair condition.

The tumor was found to weigh thirty-five pounds. It is the largest fibroid I have ever seen.

The patient has made a satisfactory recovery and is now ready to leave the hospital.

*Clinical report before the Louisville Medico-Chirurgical Society.

CANCER.*

By G. A. Hendon, Louisville

In presenting a technical subject to an audience whose vocations are diversified one runs the risk of failure to arouse interest by lack of intimacy in the treatment of his subject on the one hand, and by producing confusion in the minds of his hearers by a too analytical discussion, upon the other. I hope I may be able to steer safely midway between these two perils and accomplish some real and lasting benefit to the cause of long life and comfort for those who live it.

Much of the knowledge of cancer is speculative but enough is positively known to enable us to exercise a very effective control over the mortality statistics. The reason that cancer is increasing is, that diffusion of knowledge regarding it has not been thorough enough to reach the general public particularly those who are too tired when night comes to devote any time or energy to reading literature that has been dessicated by rules of living and statistical mathematics. This education should be started in early childhood by teachers in public schools as soon as the child can spell words with two syllables. At this juncture it might serve to interject that the number of people dying in the United States of cancer in 1921 was 93,000 whereas in 1920 the number was 89,000. The increase of 4,000 per year is startling. I am convinced that by proper degree of education the advance can not only be halted but the mortality consistently reduced every year. I am strengthened in this belief by the pro-

*Read before an open meeting of the Warren County Medical Society.

gress made in the warfare against other plague diseases. Notably tuberculosis in which the mortality has been reduced by fifty per cent.

Our object in the campaign of education which has been launched by the American Society for the control of cancer is to take the things known to be true concerning the disease, to the people in a way that their meaning and purport can be understood in the absence of any technical training or special educational advantages. The following facts have been proven and will be presented here tonight in the hope that they will save some lives in this audience because that is my mission here.

First. Cancer is not in its primary stages a constitutional disease. It is not a blood disease. It becomes both after it has been allowed to progress.

Second. All cancer in its primary stage is curable if situated in accessible regions of the body.

Third. Cancer is not hereditary and so far as known is not transmissable.

Fourth. The most usual factor in the cause of cancer is prolonged irritation either Chemical, Bacterial, Mechanical or Thermal. The latter (heat) being the most potent.

Fifth. The most important thing to know about cancer is how to recognize it in the potential stage of its existence. This will be dealt within a particular way later in the paper.

One may ask how to account for the increase (4,000 deaths in one year) and I beg to submit the following reasons that are known but not realized by the general public.

(1). The publication by a certain class of newspapers of quack cancer cure advertisements.

(2). Misguided and unfounded faith in various cults and imaginary sciences.

(3). Efforts at concealment on the part of cancer victims.

(4). Lack of knowledge concerning the early manifestations of the disease.

(5). General disbelief in the possibility of a cure.

(6). Prevalence of the idea that cancer is hereditary and therefore in the blood.

(7). The Abhorrence of Surgery on the part of many people.

(8). The fact that certain types of cancer are cured by a paste.

(9). Ignorance of the chief exciting causes of cancer.

(10). The popular custom of ascribing symptoms to change of life, stomach trouble and indigestion.

These are things that hamper the efforts at control. Now let us view the educational influences that may be expected to arrest the march of destruction of this dreadful malady.

(1). Development of moral tone and the birth of a conscience in the advertising columns of the press.

(2). Diffusion of knowledge by magazines and newspapers concerning early symptoms.

(3). Indisputable evidence of curability of the disease.

(4). The dissipation of belief in all the so called hereditary diseases.

(5). The modern safety of anaesthesia which dispells the dread of surgery.

(6). Discrimination on the part of physicians concerning cases amenable to different forms of treatment.

(7). Dissemination of knowledge concerning the chief exciting causes.

(8). Full and adequate appreciation of symptoms heretofore ascribed to derangement of function.

(9). Readiness on the part of doctors to recommend surgery upon suspicion of malignancy.

And as cure hinges on early recognition I shall endeavor to give you some of the leading characteristics of the disease in its early stages.

(1). All tumors, lumps and abnormal growths are liable to undergo cancerous degeneration. This is especially true concerning the female breast.

(2). All ulcers or sores that can not be readily accounted for especially if occurring after forty should be examined by a physician with a view to determining cancer.

(3). Persistent indigestion if it occurs after forty is due to gall-stones, ulcer or cancer in the intestinal tract.

(4). Constipation if accompanied by progressive loss of weight is generally due to cancer of the bowel.

(5). 85% of all lumps occurring in the female breast at any age are cancers.

(6). Menstrual flow continued beyond the age of 50 is due to cancer or tumor of some kind.

(7). Cancer is painless in its earliest stages.

(8). Any issue of blood without apparent reason is indicative of cancer.

At the present time statistics show that an average of one year elapses in cancer cases, between the appearance of early signs and consultation with a physician. The mortality is going to diminish in proportion to the abbreviation of this period.

Every month it is shortened will reduce the mortality one twelfth.

In our present state of knowledge we can not prevent cancer but we can prevent death from cancer if the cases are seen as early as they should be.

It is quite natural that if your interest is aroused at all it will center about the methods of cure and their respective merits. I will therefore submit the most approved and tested measures known to the medical profession. I shall also endeavor to give you an idea of the adaptation of each remedy.

(1). Excision.
(2). Actual cautery.
(3). Paste.
(4). X-ray.
(5). Radium.

Excision is the ideal treatment and is always effective unless the delay the cancerous process has been allowed to involve either massive areas of tissue or structures so vital in their functions that they present insuperable obstacles to removal. Again the situation of the cancer may be such that to approach it one would have to destroy such important structures that the patient would die before removal could be effected.

The Actual Cautery is employed when the vascularity of tissue in which the cancer is situated is so great that hemorrhage would be very difficult to control if an excision were attempted. Or if the accessibility of the location of the growth is difficult. Again the heat from the cautery is thought, and not without good reason, to possess a destructive influence on cancer cells for a considerable distance from the surface of actual contact.

Certain chemical pastes are very effective and very reliable in curing superficial forms of cancer that appear as ulcers upon the face. If the ulcer does not communicate with a mucous membrane and is not over two inches in its longest measurement it can be always cured by a paste or salve. There is some prejudice against their use because they are the sum and substance of cancer quackery. Cancer quacks use them and they accidentally hit upon the case to which they are adapted, with most happy results, but again not knowing or caring for the proper indications they use them with most disastrous consequences. To recommend them to public confidence the quacks endeavor to weave about them a web of romance and mystery, such for instance as a secret inherited through a long line of ancestors who transmitted to the eldest son or daughter for generations. Sometimes they have filched the formula from an Indian Chief, etc. But robbed of romance and tradition they all depend for their activity upon either arsenic, chloride of zinc or sulphuric acid. But I repeat they will cure such cases as I have described to you if used properly. Any doctor knows how to use them.

Both x-ray and radium are to be tried but so far no accurate estimate of their efficiency has been determined. It requires an expert to use either with any hope of success. We do not know what the future holds in store for them because as yet their action is not completely understood. I am frequently asked if the cause of cancer is known. Although this question has no direct practical bearing yet it seems to hold universal interest because if ever found out will no doubt exert important influence in determining the cure. Up to date we know the exciting causes as already mentioned. We know the processes which constitute the phenomena of cancer. We are quite familiar with the changes that take place in the cells which constitute cancer. But we do not know the essential cause of the aforesaid changes and alterations. I believe the description of the cancer process is so simple that it can be made interesting to almost anybody who cares the least bit. We must first understand the animal body is constructed on the same general plan as a brick house, the bricks in the house having their counter part in the cells of the body and the mortar between the bricks having its analogy in the intercellular cement which hold the cells together. As the brick is the unit of the house so is the cell the unit of the body. As the house is but the aggregate in mass of the brick, so is the body but the aggregate in mass of the cells it contains. Here the analogy ends, because a brick stays the same or corrodes and crumbles with time. The cell is endowed with a principle that enables it to reproduce new cells continously.

If brick are removed from the wall of a house the gap remains. If cells are removed their place is supplied by new ones produced by the vegetative activity of the ones adjacent to the breach. All tissue cells possess the power of reproduction. It is also called proliferation and normal cells proliferation or reproduction is controlled by the laws of function and nutrition. No more are proliferated than is necessary to fulfill the demand of the function to be performed and no more than can be adequately supplied by the blood vessels in the vicinity. At this point the cell made abnormal by the blight of cancer begins to show its baleful influence. It proliferates in a manner beyond all regard for the law of purpose and in utter disregard of its nutritive supply. The effect is, great masses of tissue are produced out of all proportion to form and function and without necessary blood supply. The final result is that the masses of tissue having no function and insufficient nutrition break down and slough and we call it a cancer. In the meanwhile the system is

absorbing the products of the decomposition and general poisoning and blood impoverishment results.

As the wild and lawless cells of cancer migrate to various parts of the body, they choose for their routes of travel the lymph streams but rarely the blood stream. Therefore it is a misnomer to say that cancer is in the blood.

THE PROPHYLAXIS AND TREATMENT OF ECLAMPSIA.*

By Edward Speidel, Louisville

The trend of modern medicine is toward the prevention of disease rather than the cure, and there is no more fertile field for this, than in obstetrics. It is claimed that 75% of the women who die in childbirth each year, lose their lives on account of Eclampsia, a disease that rarely shows itself in pregnant women who are under proper supervision.

It is a significant fact that the large prenatal clinics in various parts of the country show practically a complete absence of this condition in the pregnant women in their charge. The prenatal clinic connected with the City Hospital in Louisville with a registration of more than 1500 women has not had a single case of Eclampsia in the last three years.

The cases that we conduct are all emergency cases sent in after they have had a number of convulsions. The automobile has brought the city to the country and the country to the city and rarely are conditions so bad that a patient cannot travel five or ten miles to see her doctor. In consequence all maternity cases whether in the city or the country should have up to date prenatal care, and physicians should soon refuse to assume responsibility for maternity patients, that do not call them until they are in actual labor.

Of all the scientific and complicated theories supposed to explain the onset of Eclampsia, two are at least most often associated with it and though perhaps not the causative are yet most often the culminating features preceding the attack.

It will not require a very close analysis to find that in most instances a fat anaphylaxis has something to do with it. The patient will give a history of having eaten ice cream, green beans or kale greens cooked with bacon or other grease impregnated food.

It should also be remembered that in most instances the maternal eliminating organs that are trying to take care of the excretions of the fetus and the pregnant woman, in the latter months are overtaxed with the excessive food taken in by the woman, who is in most instances, as a special evidence of well being induced to eat for two. If this practice is stopped and the three other points of importance in prenatal conduct are observed then eclampsia should to a large extent be eliminated.

The blood pressure is a very important index of the condition of the pregnant woman especially as it is rather low in the majority of normal cases. A rise beyond 150 M is t' e a distinct indication of danger. Not only the presence of albumen, but a colorless urine of low specific gravity with or without edema is an indication of impending toxemia.

Strange to say the cases going into eclampsia with most marked edema seem to be more readily controlled than those without. Headache and visual disturbances in the latter months of pregnancy should at once engage the attention of the attending physician.

The treatment of pre-eclamptic toxemia, demands rest in bed at once and until all signs of danger are over. It is even important to stipulate that the patient should have a room to herself and that marital relations should not be tolerated.

A preliminary diet of nothing but water for twenty four or forty eight hours until decided improvement in kidney function is manifest should be prescribed. Then milk may be slowly added. It should be remembered that most of our text books are written by city doctors and when they speak of milk, they refer to the blue white liquid that is deposited at our doors each morning.

In the country, they are very apt to select the finest Jersey or Holstein in the flock to furnish the milk for the toxic patient and superimpose a fat anyphylaxis upon the existing toxemia. Consequently skimmed milk should be used under such circumstanees.

Two cases referred to me only lately were vivid examples of this practice. One case had been in the hands of a good doctor who had put the patient to bed, but she drank nearly two quarts of rich Jersey milk daily. She reached me very edematous with four plus albumen in the urine. Fortunately elimination could be practiced before labor began two days later and the patient was delivered of a living child without convulsions.

The other case was not so fortunate. She had been in charge of her doctor for a month, who recognizing the gravity of her condiiton had put her on a milk diet but allowed her to be about. She was brought in on a wet cold night with five convulsions on the way and after I was fortunate in relieving the eclampsia, I found a pleurisy with effusion which became an empyema and finally necessitated a thoracotomy to relieve the condition. Fortunately the patient recovered in spite of the added complication.

*Read before the Muldraugh Hill Medical Society.

In this instance the fat anaphylaxis from the rich milk plus the exposure to varying temperatures in consequence of not being kept in bed, surely had a great deal to do with the onset of the convulsions.

Fruits and the fruit juices and the cereals can be added to the diet of the pre-eclamptic as improvement shows itself. Purgation, daily warm baths and diuretics should soon bring about an improvement in the kidney function, shown by the increased secretion of urine with a diminished albumen content. If the patient with such full restrictions does not respond in a reasonable time, then the induction of labor to save both mother and child is indicated.

No single individual has a large enough experience with as infrequent a condition as Eclampsia, to be able to pose as an authority upon the subject, and in consequence we have learnt to depend upon the reports from the large maternity hospitals in this country and in Europe for any advances in the treatment of this serious condition.

We are exceptionately fortunate this year in having access to the papers and hospital reports on Eclampsia as resented before the British Obstetrical Society in London. These reports are gathered from the large hospitals in London, Edinburg and Dublin and all show the very general adoption of the conservative treatment of this condition.

To Stroganoff of Russia belongs the credit of having first brought this method to the attention of the profession, with a remarkably low maternal mortality of only 8% in 800 cases. Tweedy of Dublin modified the method and that has become the recognized treatment in the Rotunda Hospital of that city.

Ross McPherson of the New York Lying in Hospital has for the last three or four years brought the treatment especially to the notice of American Obstetricians with the very good results that have been attained with it, in the institution with which he is connected.

Consequently it may be justly claimed, that the recognized treatment of Eclampsia, now is the conservative method. Accouchemont force has such a high mortality that it is no longer considered as a sane method for treating this condition.

Even Cesarian section in the hands of expert operators presents such an appalling mortality, that the indications for its performance must be very clear to justify resort to the operation. It surely seems hardly justifiable to resort to it, to save the life of a very premature child.

Practically all authors of text books on Obstetrics have discarded Veratrum Viride, although some obstetricians report good results with it. It is a strong cardiac depressent and no doubt at times at least is an added factor in the mortality of Eclampsia.

It should only be used in cases attended with a high blood pressure and a repetition of the dose is only indicated when the blood pressure has again risen after the initial dose.

Even those claiming experience in its use have no fixed rule for its dosage. Of late Veratrone a standardized solution in ampoules has been introduced with instructions to use 1 c.c. as a dose in cases with a blood pressure above 200, three fourths c.c. if the pressure is between 175 and 200 and ½ c.c. if between 150 and 175 M.

It is not to be used in post partem eclampsia as it has been proven ineffective in that condition. The conservative treatment differs somewhat as to whether the eclamptic is a primipara or a multipara. The most important factor in the treatment is to so conduct the manipulations, that the treatment itself may not incite convulsions.

It is very evident to us now that many cases have been lost by over treatment. A hypodermic of morphine should be given at once provided the patient is not in coma. A comatose patient can generally be treated without inciting convulsions. One half grain is given to a primipara, one fourth to a multipara and the tendency now is to repeat the doses more guardedly than formerly.

One fourth or one eighth grain being given sufficiently often to control the attacks. If there are any signs of pulmonary edema, 1|200 grain of atropin should be added to the injections.

Throughout the attack and during the treatment the patient should be kept on the side in a well lighted well ventilated room. It is a mistake to suppose that the room must be darkened to prevent convulsions. Quiet should be maintained however. The lateral position and in severe cases even with the head hanging over the side of the bed is intended to promote the passage of fluids from the throat and mouth in order that the patient may not drown in her own secretions.

This position will not interfere with pushing a folded napkin between the teeth at the onset of a convulsion, to protect the tongue. As is now well established, it is dangerous to give Chloroform during the convulsions as it produces the very same destructive changes in the liver cells caused by the toxemia. Very little Ether can be inhaled during the fit, as the respirations are short or in abeyance but an oxygen tank if convenient will be of real service to the patient after a convulsion.

Unless the patient is comatose the following manipulations should be performed under Nitrous Oxide or light Ether anesthesia. The

stomach should be washed out with a gallon of warm solution containing two rounded tablespoonfuls of Sodium bicarbonate and at the end of the lavage two ounces of saturated solution of Magnesium sulphate should be poured into the stomach through the tube.

The bowel is irrigated through a colon tube introduced high up with soapy water until the solution returns clear, then with four or five gallons of warm bicarbonate of Sodium solution. A quart or more of the solution is allowed to run in and then syphoned out and this continued until the water returns clear. the patient during all this time having been kept on the side preferably with the hips slightly elevated. At the end of the irrigation two ounces of saturated solution of magnesium sulphate with a quart of the Sodium bicarb solution are introduced and the tube withdrawn.

If the purgative does not act in a reasonable time then the injection of ½ an ampoule of Pituitrin will generally bring about an evacuation.

The bowel irrigation must be done slowly and carefully and will at times require as much as an hour for its performance. It is repeated every five hours until decided improvement is evident.

No direct interference with the pregnancy is practiced unless repeated convulsions show that the patient is not responding to the elimination treatment.

In such circumstances a Vorhees bag distended with sterile water is introduced through the cervix under Nitrous Oxide anesthesia in primiparae. In multiparae with one third dilatation of the cervix, the membranes are ruptured and a considerable part of the Liquor Amnii is allowed to escape.

Labor generally progresses uninteruptedly in most cases and should be expedited by a low forceps delivery when the head reaches the perineum.

There should be no unnecessary haste in any of these procedures, the patient especially not being disturbed if evident progress is being made for many cases have been lost by over treatment.

Endameba Histolytica in Seminal Fluid in a Case of Amebic Dysentery. In the case reported by Laurence E. Hines, Chicago (Journal A. M. A., July 28, 1923), Endameba histolytica was found, during life, in the seminal fluid of a man suffering with chronic amebic dysentery. As the seminal vesicles were enlarged and tender, and no demonstrable changes were present in the prostate gland or testes, this case is regarded as one of amebic dysentery with amebic metastasis to the seminal vesicles.

THE SYMPTOMS OF HYPOPHYSEAL TUMOR.*

By Adolph O. Peingst, Louisville

As an introductory to my paper, which will deal with the symptoms of hypophyseal tumors, I wish to report in full an unusual case to illustrate some of the clinical points.

On May 5th, 1922, male aged 49, consulted me because of occipital headache and double vision. He gave the history of having never been sick and outside of the need of reading glasses, which he had used for four years, of having had no trouble with his eyes. There was no history of venereal disease. No history of an injury. He had noticed in the last year loss of sexual power. His present trouble began about a year ago with pains in the occiput, especially after using his eyes. At times the pains were quite severe and at such times were also noted in the vertex. He had for almost a year occasionally seen distant objects double (horizontally.)

Family History: Father died of "heart trouble" at 60 years of age. Mother and two brothers living, all in good health. No brothers or sisters dead.

Examination of Eyes: April 12, 1920. No pathology found in either eye.

R. 20 plus 30 plus 0.5; 180 plus 0.5 plus 20 plus 20.

L. 20 plus 30 plus 0.25; 1.0 plus 20 plus 20.

V. F. showed fields for white normal. Circles for red and green constricted on temporal side of right field. No scotomata present. No evidence of hemiopia. He had a homonomous diplopia of 16 degrees and a hyperphoria of 4 degrees although there was no manifest squint. There was no exophthalmos and the fundi were normal. He was advised to have a general physical examination. This was made by the Solomon Clinic but revealed little that had bearing on the symptoms of which he complained. The report showed that the patient had a slight ataxia. His mind seemed to work sluggishly and he was forgetful. There was no Romberg sign; Babinski and Oppenheim negative. Pulse rate 78, temperature 98 degrees F. Blood pressure systolic 125, diastolic 64. Urine normal, blood count normal. Wassermann negative; after provocative treatment with iodide of potash, one plus.

Patient was not seen again until May 5th, owing to his absence from the city. Examination then revealed marked changes in his condition. There was slight exophthalmos of the right eye, a manifest convergent squint with inability to rotate the eye outward to its full extent. Vision was reduced to counting

*Read before the Louisville Medico-Chirgurical Society

on fingers at 12 feet. Some changes had taken place at the macula as evidenced by a mottled appearance (retino-choroditis). There was slight pallor of the temporal half of the nerve. Veins and arteries normal (no evidence of choked disc.) Perimetric readings were uncertain though form field for white still seemed about normal. X-ray examination (Keith & Keith) showed entire absence of sella tursica. Nasal accessory sinuses clear.

Diagnosis rested between a retrobulbar growth of the right orbit and a tumor of the hypophysis. Even in the absence of hemianopsia and the absence of choked disc, the persistent headache and the changes in the sella, led to the tentative diagnosis of tumor of the hypophysis. At my instance he consulted Dr. Dabney at this time and if I remember correctly my opinion was shared by Dr. Dabney. Owing to the probability of the presence of a tumor of the hyophysis the patient was advised to see a well known surgeon in the East and while there to have his eyes reexamined.

The oculist examined patient on June 14th, over a month after my last examination, and reported complete temporal hemianopsia for colors for the right eye—none for white—and a large temporal hemianoptic scotoma. The roentgenologist reported an enormous enlargement of the sella turcica with disappearance of the posterior cliniod processes, and was inclined to think that there was a growth of the pituitary body. The oculist wrote that the ocular symptoms confirmed the x-ray findings although the general symptoms of pituitary body disease were not very evident save only for the practically complete sexual apathy and severe headache. Patient was seen by the surgeon soon after the examination by the oculist. I quote from his letter of June 30th, "The operation which I performed on Mr..... June 15th, consisted in the evacuation of a pituitary cyst by the transphenoidal route. Apparently the lesion had already decompressed itself through the floor of the sella as the cyst presented as soon as the sphenoidal sinus was opened."

The administration of pituitary extract in doses of 3 grains, three times a day, for six months, was suggested. There was rapid improvement following the operation as evidenced in the report of an examination made on June 30th, while the patient was still in the East, in which a reduction of the exophthalmos was noted as well as a distinct improvement in the palsy of the external rectus so that patient could move his eye to the outer commissure. The color hemianopsia had disappeared.

My records show that I saw him again a month later (July 29, 1920). The patient complained of headache, though perhaps less severe than formerly. His general condition showed improvement and he seemed encouraged. Examination revealed absence of exophthalmos; function of the extrinsic muscles improved although there was still some manifest convergence. Excursion outward seemed about normal; fundi unchanged; form fields still normal; hemianopsia for colors still present in right eye. V. R. 20|200 (excentric), L. 20|20.

Condition remained unchanged until October, 1920, when headaches grew more severe and more constant and patient became more depressed. By January he had grown perceptibly worse, the exophthalmos of right eye had returned, movements of the eye ball were also again limited in all directions. The right visual field was the same as at previous examinations but field for left eye showed complete hemianopsia. Early in February the patient returned to the East and on February 18th, was again operated upon but did not survive the operation. I quote from the surgeon's letter dated February 18th, 1921:

"The lesion found at operation surprised me in that it had extended so far beyond the region of the sella turcica. The sella itself was filled with a tumor as large as a walnut and on the floor of the sella there was an opening over a centimeter in diameter, evidently the result of our sella decompression of a year ago. But apart from this large intrasellar lesion, there was an equally large, if not larger, extension more than half way across the middle fossa. The intra-sellar lesion had the general appearanees of an adenoma, the extra-sellar lesion was quite different in that it was of much softer consistency and in some places had quite broken down so that it seemed almost as though there had formed an abscess. At least the material had the appearance of pus. However, I have not as yet had a microscopical examination of the exudate. The floor of the skull beneath this extension was everywhere eroded. It could be readily understood from the location of the lesion in the right middle fossa why the patient had symptoms referable to irritation of the trigeminal tract. You may recall the paresthesia of which the patient complained not a little. The tumor was in immediate contact with the ganglion in its first, second and third divisions but in addition to this the cavernous sinus and the third, fourth and sixth nerves passed directly through the tumor and I am rather surprised that there were not evidences of paralysis of each of these three nerves. I have no doubt the exophthalmos, which was another conspicuous symptom, was due to the obstruction to the venous circulation. These are the more interesting features of the gross characteristics of the lesion.

Now with regard to the operation: We had a very satisfactory exposure of the lesion and were in the process of its removal when there developed an alarming hemorrhage which I assume was from the cavernous sinus. Evidently the sinus wall had been infiltrated by the tumor and must have been quite fragile, otherwise it would not have been damaged by our manipulations. We succeeded in controlling bleeding but only with the aid of a large tampon. The operation had to be interrupted, of course, and the patient was immediately given a direct transfusion for which provision had been made. For a while there was a very satisfactory reaction so that I did not altogether despair of the patient's recovery when he left the operation room. However, this improvement did not persist and he subsequently succumbed.

The pathological diagnosis is sarcoma. Three specimens were removed; one from the sellar contents, one from the intracranial extension into the middle fossa, and the third from the wall of a cyst that presented on the surface of the latter. In all three specimens the pathological picture is the same. It is interesting to note further that the wall of the blood vessel which penetrated the growth, either the internal carotid artery or the cavernous sinus, was also infiltrated with the tumor tissue and I presume that it was owing to the fragility of the vessel wall that there occurred during the operation the profuse hemorrhage."

While it is my desire to confine myself to the symptomatology of tumors of the hypophysis, I feel impelled to outline briefly the anatomical and physiological facts essential to the proper interpretation of the symptoms of tumors of this region. You will recall that the hypophysis or pituitary body rests in the niche of the sella turcica at the floor of the cranium. It is immediately behind and somewhat below the optic chiasm and hence is in a close proximity to most of the cranial nerves and to the cavernous sinuses. It is normally about the size of a cherry stone and is composed of an anterior and a posterior lobe. The anterior and larger, supposedly the functional part, resembles histologically the parathyroid glands. It is surrounded by a fibrous capsule which sends strands into the gland substance dividing it into variously shaped alveoli. These alveoli are packed with cells, mostly of cubical shape with granular protoplasm and a large nucleus. There are also some smaller chromophilic cells. Between the cells an occasional space is filled with colloidal substance similar to that found in the alveoli of the thyroid gland. It has been found enlarged in the symptoms complex known as acromegaly and very small in dwarfs. Its complete removal causes death in a few days with symptoms similar to those after removal of the thyroid gland. Extracts from the anterior lobe injected into the body produce no immediate effects. The posterior lobe has just inside its capsule a cellular make-up somewhat similar to the anterior lobe but the interior and larger portion contains considerable fibrous connective tissue and blood vessels, nerve cells of various shapes and sizes and an abundance of neuroglia cells. It evidently has the characters of a ductless gland influencing the tone of the blood vessels, for extract made from the posterior lobe (pituritin) when injected into the body causes contraction of muscle tissue and hence constriction of the blood vessels. Enlargement of the posterior lobe is associated with dystrophia adiposis and genitalis.

Tumors of the hypophysis manifest themselves in a complex of symptoms. For convenience of study they have been grouped under three headings. (1) those due to intracranial pressure; (2) those due to functional disturbance of the pituitary body, recognizable by constitutional symptoms, and (3) those due to encroachment of the growth on its surroundings to which Cushing first alluded as "neighborhood signs."

We need only to be reminded of the close proximity of the hypophysis to the optic nerve crossing anteriorly and upward, the ocular motor nerve (third) posteriorly and some of the other motor nerves of the eye and the cavernous sinuses laterally, to realize why tumors of the hypophysis so frequently manifest themselves in ocular symptoms. The early disturbance of ocular function accounts for the frequency with which these patients consult the oculist. Undoubtedly the ocular symptoms of tumors of the pituitary body are the most frequent and the most important of all neighborhood signs, especially inasmuch as they so often manifest themselves long before other signs of a tumor become apparent. The early diagnosis on the part of the oculist has been a great factor in the advance made in recent years in the surgical treatment of these cases.

The chief ocular symptoms of pituitary body growths are disturbance in peripheric vision as manifested in changes in the visual field; lowered central visual acuity and changes in the optic nerve as seen with the ophthalmoscope. As tumors of the hypophysis are, by virtue of their origin in the sella, anchored to the median line, most of them in their growth extend upward behind the chiasm in the median line and encroach primarily upon the posterior-inferior portion of the chiasm where they make pressure upon the nerve fibres at their decussation, hence the

changes noted in the visual field in many of these cases. The defect in the visual field naturally depends upon the size and position of the tumor. If the pressure is on the greater part of the central chiasm the nerve fibres supplying the nasal half of each retina become inactive and we have the typical bitemporal hemianopsia. However, pressure may involve only a portion of the chiasm and in such cases instead of having the entire half of the field blind only segments of the field are absent (bitemporal hemianoptic scotomata). In cases of extensive growths the uncrossed fibres of the optic tract may become involved, causing loss of the other half of the visual field, or, in other words, total loss of vision. When this occurs it usually involves only one side or the other. In such a case there would be temporal hemianopsia on one side and total loss of vision on the other. Instead of taking a forward direction, tumors of the hypophysis may extend backward involving the tract of one side behind the commissure with a resulting homonymous hemianopsia.

It would interest you to know that the fields for colors are affected proportionally with the form field but in most cases color fields show earlier defects than the form field.

Rarely tumors of the hypophysis extend from below anterior to the chiasm, while again they have been found to erode the sphenoid bone and to extend downward. A case has been recorded by Schoenbon in which the tumor destroyed almost the entire body of the sphenoid in its downward growth and although as large as a walnut had caused no ocular symptoms.

Most cases of hypophyseal tumor sooner or later affect the central vision of one or both eyes, varying from a mere blur to total blindness, although instances are on record in which central vision remained normal even in the presence of a large tumor. There seems to be no constant relation between visual field defects and disturbance of central vision. Disturbance of central vision may be due to pressure of the growth on the macula-papular bundle of fibres which supply the macular region, the point of central visual perception, or it may result from neuro-retinitis or choked disc coincident to intra-cranial pressure. In either case the disturbance of function develops slowly. Congestive optic neuritis, as seen in cases of brain tumor, is uncommon in tumors of the hypohysis and choked disc quite rare, but slowly developing atrophy, the result of pressure of the tumor on the nerve, is quite frequent. I notice in a report of 40 cases of hypophyseal tumor by Bartels that primary atrophy of the nerve was present in half of the cases and atrophy secondary to nerve lesions in only 10 per cent of the cases. Fifteen per cent of his cases showed optic neuritis and 15 per cent bilateral choked disc. Early ophthalmoscopic examination of these cases is usually negative and later the appearance of the nerve head may vary from slight pallor to typical simple atrophy (descending atrophy).

In the cases of hypophyseal tumor which extend backward the motor oculi nerve as it emerges from in front of the pons may be pressed upon with resulting symptoms of the third nerve paralysis as ptosis, mydriasis, of accommodation and paralytic squint (downward and outward). The third is the most frequent of the motor nerves to be involved. It may affect all of the parts supplied by it or only one or more of its branches of distribution may become inactive. Extension laterally may press upon the fourth and sixth nerves with resulting squint and disturbance in rotation of the eye in the direction of the superior oblique or external rectus. It may also press upon the cavernous sinuses, causing exophthalmos and at times unilateral choked disc. Various combinations of eye muscle paralysis have been reported as well as complete ophthalmophlegia externia. In such cases exophthalmos results from inability of the muscles to hold the eye ball in place. The trigeminus and facial are less frequently involved.

One of the most significant and important of the neighborhood signs or pituitary growths is enlargement of the bony fossa of the pituitary body, revealed by the x-ray. While the size of the normal sella is variable, it seldom reaches the dimensions of more than 15 mm. transversely and 30 mm. antero-posteriorly. In tumor development of the hypophysis it may enlarge in a varying way from a simple spherical distension to an entire obliteration of its outlines. Exceptionally the growth leaves the confines of the sella early without causing distension of the cavity, hence the presence of a normal sella does not preclude the possibility of a hypophyseal growth. On the other hand destruction of parts of the sellar walls or enlargement of the sella may result from intracranial disorders other than tumors of the hypophysis, hence such changes do not necessarily bespeak the presence of a hypophyseal tumor. The early headache in pituitary growths is classed as a neighborhood symptom as it is believed to be due to distension of the capsule of dura covering the gland and not to an increase in intracranial pressure. It is usually localized between the eyes.

The symptoms of hypophyseal tumor due to disturbance of physiological function of the pituitary body are not constant and hence are of value only in a positive way. When

present they vary, depending on the portion and amount of the hypophysis involved, on the age of the patient, and on whether the growth is of a destructive nature or not. The symptoms depend largely on whether the presence of the tumor brings about a hyperactivity of the gland or an insufficiency. It is now generally believed that the cases of hyperplasia of the hypophysis are often associated with gland hyperactivity and that whenever this occurs in early life, before ossification of the epiphyses of the long bones of the body has been completed, an exaggerated growth of the entire skeleton and of the soft part results and the condition of giagantism prevails in which a precocious muscular, mental and sexual development may exist. If hyperactivity takes place after adolescence, after epiphyseal ossification, the height of the body is usually not increased but the bones of the face and the extremities of the long bones become enlarged, a condition known as acromegaly. In either case the changes are thought to be due to a hyperactivity of the anterior lobe of the gland. Hyperactivity is relatively a transient phenomenon and usually passes into insufficiency although insufficiency or hypoactivity of the gland is believed to result in most instances from gland destruction or from gland inactivity, due to pressure of tumor mass on the gland. When hypoactivity begins in early life the well known syndrome of Frohlich results, the entire body growth is stunted, with especial failure of the sexual organs to develop and failure of hairs to appear on the body. A marked obesity occurs so that in the case of boys a peculiar feminine appearance results. These subject usually develop a high tolerance for sugar. They are mentally dull, displaying an inability to concentrate and evidence of loss of memory. Polyuria is frequently present. If deficiency of hypophyseal activity begins later in life there would naturally be no retrogression of normal anatomical features already established, but obesity occurs with heightening of sugar tolerance and frequent polyuria. A rapid and a gradual loss of sexual function, and in females amenorrhoea, are other common symptoms. These cases spoken of as dystrophia adiposo-genitalis present the picture of a eunuch. It is believed that in the cases associated with insufficiency of hypophyseal activity the pathology is in the posterior lobe. Not infrequently cases have occurred, in which, even during childhood, notwithstanding an apparent destruction of the entire hypophysis, symptoms of hypophyseal inactivity did not arise, a fact explained in a possible small remaining portion of the gland performing the physiological function or in a vicarious action of other ductless glands, most likely the parathyroids.

Symptoms brought about by increase in intracranial pressure which characterize brain tumors in the broad sense, such as headache, drowsiness, vomiting, vertigo, epileptiform seizures and coma, are not frequent in growths which develop in the hypophysis. Of these, headache is the most frequent though it also is not a constant symptom. When present it seldom remits and is quite severe.

From the foregoing symptomatology it is evident that the early diagnostic signs of hypophyseal tumors relate largely to the eye, although the complex of other neighborhood signs, symptoms due to disturbance in pituitary secretion, and symptoms of a general character, are essential to the diagnosis.

In the final diagnosis a radiograph of the skull is indispensable. While the presence of a large sella, in the absence of all other symptoms of hypophyseal tumor, has no significance and its normal size would not exclude the possibility of a pituitary growth, it is a most valuable corroborative sign when other symptoms of hypophyseal tumor are present.

Applying the symptomatology to the reported case, I would above all emphasize the relatively slow development of symptoms in the presence of a growth of considerable magnitude. The early and persistent headache was the first significant symptom. The diplopia complained of for a year, before his symptoms were severe enough to cause him to seek medical advice, is a feature of considerable interest indicating as it does involvement of some of the motor nerves to the eyes and justifying the assumption that even at that time the tumor had likely attained considerable size and had extended beyond the confines of the sella turcica. The value of field measurements in diagnosing intracranial growths is shown in the constriction of the color field in this case which in the presence of persistent headache and ocular paresis at once threw suspicion on involvement of the optic chiasm. This should emphasize the importance of taking the fields for colors even in the absence of changes in the field for white in all cases suspicious of intracranial disease. Later the radiographic demonstration of a very large sella, which led to the tentative diagnosis of pituitary tumors, and which prompted the advice to consult the cranial surgeon regarding the advisability of an operation, was another link in the diagnostic chain. The development of the hemianoptic fields late in the progress of the case, long after the change in the color fields, no doubt has its explanation in that the extension of the mass took place in a backward direction rather than toward the chiasm. The symptom of sexual apathy

was a diagnostic point of interest and importance, and indicated a destructive process in the hypophysis. I would call your attention to the absence of optic neuritis or choked disc, notwithstanding the presence of the very large growth revealed at the operation.

DISCUSSION

S. G. Dabney: The symptoms of pituitary tumor may be conveniently divided into two groups, (a) mechanical, and (b) functional. The former vary according to the direction in which the enlargement proceeds, and the latter also vary according to whether the anterior or posterior lobe is involved.

It seems rather remarkable that, in pituitary tumor, ocular symptoms may persist practically alone for a considerable time; it is also remarkable that some observers see an unusual number of these cases. Benedict, of the Mayo Clinic, published an interesting paper on this subject about two years ago and reported I think twenty-two cases. He stated that in his opinion some of the cases which oculists regarded as simple optic atrophy were in reality cases of pituitary disease which was more common than generally believed and the diagnosis was frequently overlooked.

In regard to the mechanical symptoms: Ocular manifestations are of the most importance. They may be placed in three or four groups. The objective appearance as seen by the oculist, consisting of pallor of the optic nerve, is the most common feature. Next in frequency is a low-grade optic neuritis; genuine choked disc occurs in only a small proportion of cases, but perhaps it should be included among the objective or mechanical symptoms. The second ocular symptom is diplopia from paralysis of the ocular muscles. Diplopia is less common than optic neuritis and may even be absent. The third ocular symptom is disturbance of the visual field, and perhaps we ought also to include a fourth sign, viz., exophthalmos.

When we first began to study this affection we over-estimated the diagnostic importance of the presence or absence of bitemporal hemianopsia; this was thought to be the characteristic symptom, and in its absence the diagnosis was uncertain: but further investigations have shown that although bitemporal hemianopsia is one of the most typical and perhaps the most common symptom, it is by no means the only interference with the field of vision. Homonymous hemianopsia occurs not very rarely. There may be unilateral or bilateral paracentral scotoma generally temporally.

It is not uncommon for these patients to consult the oculist late in the course of the disease. In one case to which I shall later refer more in detail, the patient was blind in one eye when he first consulted me, and vision was only 10|200 in the other eye. I exhibited the patient before this society several years ago. The ocular symptoms, then, may be divided into four groups, viz., (a) pallor of the optic nerve, (b) disturbance of the visual field, (c) muscular paralysis (one or more muscles), and (d) rarely exophthalmos.

General or functional symptoms: These are frequently absent or do not become manifest for a long time. In one of the cases I have seen, a man under thirty, there were no general symptoms. I do not recall having asked about his sexual desire, but otherwise he was apparently in a normal state of health. In the first case of pituitary tumor I ever saw the patient had considerable apathy, not amounting to somnolence, but there was marked indifference to her surroundings. The patient was a woman under forty whose menstruation had ceased, and, by the way, that is said to be one of the first symptoms of pituitary disease in the female. The last patient seen had somnolence, headache, and was indifferent to almost everything. I have never seen one with acromegalia, nor with increase in adipose tissue.

To refer again briefly to my personal experience: The first case of pituitary tumor I ever saw was in a patient sent to me for examination by the late Dr. William Cheatham. The patient was a female between thirty-five and forty, very much depressed, and in whom menstruation had ceased. Her principal complaint was headache. Objectively she appeared to be rather delicate. That was many years ago; none of us had then done very much work on the pituitary gland. I examined the patient carefully on three or four occasions before reporting my conclusions to Dr. Cheatham, then wrote him stating that I thought there was pressure on the optic chiasm which might be due to pituitary enlargement. He concurred in the diagnosis, and the patient was later operated upon in Paris, France. I saw her once afterward; she retained her vision after the operation, and died of pneumonia a year or two later without any return of her former symptoms.

The second case was the young man I have described; he was healthy so far as could be determined, in good spirits, and apparently as vigorous as the average man between twenty and thirty. There was no history of syphilis and the Wassermann was negative. He had sustained no head injury, except while playing football he said "he hurt his head but it did not amount to anything." It was several years afterward before symptoms became manifest. When he consulted me he was blind in one eye from atrophy of the optic nerve; vision in the other eye was reduced to 10|200, but it was amazing how well he could get about; he could not read but managed to get around amazingly well. In the eye in which partial vision still remained there was beginning optic nerve atrophy with decided con-

striction of the temporal field. I took the patient to New York where he was examined by two or three specialists. While I was a little uncertain, I believed there was pituitary enlargement from the history and absence of the usual symptoms of brain tumor. The optic atrophy was significant, also constriction of the temporal field in the eye that still had partial sight. The eastern specialists concurred in the diagnosis of pituitary tumor. Several roentgen-ray pictures were made, but the x-ray was not quite so well understood then as at present. I say this because the pictures were studied in New York and also in Baltimore and entirely different interpretations placed upon them by men who were supposed to be experts. I sent the patient to Dr. Cushing for operation and he refers to the case in his book on Pituitary Diseases.

He used the nasal method of approach, opened the sella turcica, and removed part of the pituitary tumor. The disease was arrested by the operation and the patient had no further trouble with the eye in which partial vision remained. He died several years later from what cause I do not know.

The last case I saw has already been briefly reported before this society by Dr. Baldauf. The patient had homonymous hemianopsia; the temporal field on the left side was much more extensively involved than the right; and the diagnosis was a little uncertain. He had somnolence, headache, and atrophy of each optic nerve. It was my opinion that he had a pituitary tumor and operation was advised. This he declined and I understand he has grown steadily worse.

In the case reported by Dr. Pfingst I was privileged to see the patient through his courtesy. This is the only case in which I have seen exophthalmos. I do not believe muscular paralysis was sufficient to allow the eye to bulge forward; in my opinion the exophthalmos was due to venous stasis which pushed the eye forward. The man had the general symptoms Dr. Pfingst has described, he had headache which was probably mechanical in origin, and marked evidences of increased intra-cranial pressure. His functional symptoms were also significant, particularly loss of sexual power in a man under forty. He impressed me as being indifferent and apathetic. The symptoms were unlike those of ordinary brain tumor, and I agreed with Dr. Pfingst in the diagnosis, i. e., that there was probably a lesion of the pituitary body.

There is one interesting feature, to refer again to the ocular symptoms, it is not uncommon for the field of vision to be affected in the upper temporal region only in the beginning. In two of the cases I have seen the disease was arrested by operation.

B. F. Zimmerman: The symptoms of pituitary tumor may be conveniently grouped under four heads: (1) General symptoms of pituitary disease: (2) Eye symptoms: (3) Neighborhood symptoms, and (4) x-ray examination. It must be understood that not every case will show all the classical symptoms, one group may and usually does predominate.

The general symptoms fall naturally into three groups: (a) hyperfunction, (b) hypofunction, and (c) mixed types. Hyperfunction leads to excessive growth of the osseous tissue and sexual organs. If this condition occurs early in life gigantism with excessive sexual development occurs; if later, after ossification is complete, acromegaly results.

In hypofunction there is a lack of sexual development and in the male a tendency to develop the feminine type. (Froelich's syndrome).

The mixed type usually begins as hyperfunction which is later succeeded by hypofunction. In this type, then, there may be the symptoms of skeletal overgrowth with great muscular weakness, sexual impotence and often mental deterioration. In these cases it is probable that the tumor at first stimulates the gland to overactivity and later by pressure or actual destruction of the gland hypofunction results. Marked improvement in the symptoms of hypofunction often operation.

The eye symptom in the classical stage of development is a bitemporal hemianopsia. In the earlier stages, however, it may be a quadrant hemianopsia and the ocular defect may be decided in one eye and not present in the other. If all patients with acromegaly and gigantism were sent to the oculist it is probable that many more cases of pituitary tumor would be diagnosed.

There may be no neighborhood symptoms in pituitary tumor that progresses to complete blindness. So long as the tumor remains confined to the sella there may be only headache, usually bitemporal, and evidence of disturbance of pituitary function. When the tumor bursts from the confines of the sella and extends upward, the symptoms will be those of involvement of adjacent portions of the brain. These symptoms may be focal, or they may be those of general increased intracranial pressure. General pressure symptoms in turn result either from the size of the tumor or from pressure upon and obliteration of some part of the ventricular system.

Roentgenological examination gives more definite information in tumors of this region than in those of all other parts of the brain combined. In the intra-sellar type there is usually an enlargement and deepening of the sella, while in the extra or supra-sellar type the peculiar dish-shaped sella results from atrophy of the clinoids.

The question of treatment of pituitary tumor is of paramount importance. It is regretfully

admitted that present methods of treatment are not as successful as we would like. No one should attempt the operation who has not had extensive experience in brain surgery.

There are two methods of approach, i. e., the extracranial and intracranial, and the type of tumor as shown by x-ray examination will indicate which line of approach is to be employed. The intra-sellar growths should be operated by the extracranial method, i. e., through the nose or nose and mouth, while the supra-sellar tumor should be attacked by the intracranial method.

Complete removal is not to be expected in the majority of cases, but sellar decompression, the evacuation of the contents of a cyst, or partial removal of an adenoma, may preserve a certain amount of vision, and if the operation is followed by a course of x-ray treatment recurrence may be prevented.

Frank W. Pirkey: The existing relationship between the pituitary body and the eye is a very interesting subject. I have enjoyed hearing Dr. Pfingst's paper and the discussion.

The eye is so closely related to the pituitary in physiological development; it presents so many striking symptoms of pituitary disease; and is so readily accessible for examination, that ocular investigation is of great service not only in diagnosis of a diseased condition, but will enable us to learn much more than we now know about the development, function and pathology of the pitnitary body.

W. E. Gardner: I was greatly impressed with the importance of Dr. Zimmerman's remark concerning the difficulty of surgical removal of pitnitary tumors. The diagnosis can often be satisfactorily made, and investigation of such cases is always interesting, both from the standpoint of ocular symptoms and roentgen-ray findings. With the present perfection in x-ray technique I believe both cystic and neoplastic changes in the pituitary body are shown much more readily than formerly. In other words, enlargement of the sella turcica, whether hyperplastic or neoplastic in origin, is shown by roentgen-ray investigation.

In the case reported by Dr. Pfingst encroachment on the ventricles had undoubtedly occurred and ventriculography might have been of assistance in confirming the diagnosis. I am quite well aware that some surgeons doing brain tumor work attach little importance to the observations of Dandy on this subject, but I understand Cushing uses Dandy's method as a routine procedure.

While in Boston last summer I saw Cushing perform the third operation upon a patient for cystic pituitary tumor; he had already performed two previous operations on the same patient. He first withdrew some cystic fluid from the pitnitary body on one side; two weeks later he removed a portion of the cyst from the other side. I was present when the third operation was performed; the patient survived only a few days. I had the feeling at the time, after seeing such a skilled surgeon make three attempts to completely remove a pituitary, the patient being on the table two or three hours, with probably fifty artery forceps hanging about the osteoplastic flap to control hemorrhage, with so little good accomplished in so far as the prolongation of life was concerned, whether it was really worth while. I believe one is prone to have such feeling after seeing futile operations in brain surgery. Cushing and Frazier are most expert in this line yet they have an exceedingly high mortality rate.

In the case I have mentioned the patient, a student of twenty, had suffered four or five years from Froelich's disease; he was typically feminine in type with long tapering fingers, excessive fat and rotundity, and presented all the characteristic evidences of pitnitary hypo-activity. I have wondered whether examination might not show more cases of this kind among otherwise healthy school boys. Is cystic degeneration of the pituitary body more frequently noted in individuals of this class?

Dr. Pfingst's paper and case report interested me very much. I believe ocular examination in pituitary disease is certainly a great help: it demonstrates ocular paralysis, abnormality in the color fields, disc changes, etc. Change in the color field is sometimes noted much earlier than disturbance of muscular movements of the eye or even choked disc. Such cases are interesting from a diagnostic standpoint, but difficult to approach from a surgical standpoint, except for temporary relief of severe headache, nausea and loss of vision.

B. W. Bayless: The roentgen-ray is an important aid in the diagnosis of pituitary tumors. Any enlargement of the pituitary body will cause erosion or destruction of the sella turcica, just the same as an aneurism will cause osseous destruction. A tumor of the posterior lobe causes erosion of the dorsum sella and the posterior clinoid processes, whereas a tumor of the anterior lobe causes destruction of the floor of the sella turcica, and as it continues to enlarge it encroaches upon the anterior clinoid processes.

The shape and size of the sella turcica is not constant, and the diagnosis of pitnitary tumor is made more on the evidence of destruction or erosion of the bone than on the size of the sella because it is so variable. In a large individual it may be quite small; in a small person it may be quite large; yet in each instance it may be normal. So long as the outline of the sella is smooth a positive diagnosis of pituitary tumor cannot be made by the roentgen-ray. However, a sella over 15 m. m. long and 12 m. m. deep is very suspicious of a pituitary tumor.

C. W. Dowden: Any attempt on my part to discuss Dr. Pfingst's most excellent paper would seem a needless exposure of my ignorance. I have been interested in this subject, more from the standpoint of the symptomatology of hyperplasia of the pituitary body than neoplasia, and am glad to have some of my opinions corrected by what Dr. Pfingst has said in his paper.

I am glad to know that pituitary tumors can be discovered early by ocular examination. I had been under the impression that eye symptoms did not develop until the tumor had escaped from its bony cage and encroached upon the optic chiasm causing pressure on the cranial nerves.

There is much unknown about the pituitary body and many things which cannot be explained. Do eye symptoms, such as paralysis, optic nerve atrophy, etc. occur in hyperplasia as well as in neoplastic changes in the pituitary body? It is known that as great enlargement of the pituitary body may occur from hyperplasia as from small neoplasia. Will the same ocular symptoms be noted in both? That is, will eye symptoms be present in disease of the pituitary body whether it is hyperplastic or neoplastic in origin?

I have also been under the impression that in many instances of pituitary disease there was a typical so-called "pituitary headache" associated with polyuria; and that sugar tolerance was increased or decreased according to whether there was hypo-activity or hyper-activity of the pituitary gland. This so-called "pituitary headache" is often located deep in between the temples—and is described as "splitting" in character, and is thought to be caused by distention of the dural envelope of the pituitary gland. When the hypophyseal tumor enlarges and breaks out of its sellar confinement the "pituitary type" of headache may be relieved, to be replaced in the event of further growth of the tumor by the ordinary brain tumor headache, sometimes accompanied by vomiting, dizziness and epileptiform attacks.

Speaking against about what we do not know concerning the pituitary body: It is well understood that symptoms presumably attributable to changes in the pituitary gland have never been reproduced experimentally. Acromegaly, which is supposed to be due to hyper-activity of the pituitary gland, has never been produced by feeding the anterior lobe. I am reminded, in this connection, of an article which I read recently on eye symptoms in pituitary disease. Three cases were reported in which the various eye symptoms were largely corrected by feeding large doses of the whole pituitary gland, and by giving mercury by inunction, although there was no history of syphilis.

The histology of the pitnitary body is uncertain, and the same statement is true of all pituitary tumors. If I am not mistaken acromegaly is oftener noted in pituitary adenoma or stroma than any other type of tumor, less so in carcinoma, and practically never in sarcoma, which I understand is the rarest of all pituitary tumors. Sarcoma should be applied only to those malignant tumors in the cells of which granules cannot be demonstrated by special staining methods.

In the diagnosis of pituitary tumor the size of the sella turcica is of little importance. Its size varies enormously and the only x-ray evidence worth while is erosion or destruction. During the last year my associate, Dr. C. D. Enfield, has studied one hundred cases with reference to the size of the sella, and his findings were recently published in the Journal of the American Medical Association. It is surprising how greatly the size of the sella varies in different subjects.

The occurrence of exophthalmos in conjunction with pituitary tumor is interesting. While Dr. Dabney and Dr. Pfingst are probably correct that, in the case reported, the exophthalmos was due to stasis or interference with the venous blood supply, still there is some contention concerning this phase of the subject. Based on the presumed relationship between the pituitary and thyroid glands, it is believed in some instances at least that exophthalmos is caused by the same factor which produces it in exophthalmic goiter. While this is not my personal opinion there seems to be some authority for the statement. When pituitary tumor encroaches upon the optic chiasm interference with the venous supply would cause sufficient pressure to induce exophthalmos.

I believe the sugar tolerance test is worth something in the diagnosis of pituitary disease. I have seen a number of patients with acromegaly where the roentgen-ray showed a normal sella turcica. I have also seen some very interesting cases of Froelich's disease. I recall one man particularly whose weight has increased from 150 to 340 pounds. I have noted one very significant thing about Froelich's disease—and I have seen five cases during the last six or seven years—and that is every patient had a four plus Wassermann.

Adolph O. Pfingst (closing): I think there must be a difference in character of the headache which occurs early and late in pituitary disease. In the case reported the headache was probably due to the presence of the large growth in the cranial cavity rather than to the enlarged gland in the sella. I base this conclusion on the fact that the patient had early muscular paresis, showing that the involvement extended backward toward the third cranial nerve.

In my opinion pituitary tumors do not cause symptoms from pressure on the optic nerve until they have extended beyond the confines of the sella, since the sella is situated below the level of th optic nerve crossing.

In the case reported the tumor was a sarcoma. It may have arisen from the periosteum of the surrounding bone and invaded the sella secondarily.

I was surprised that nothing was said in the discussion about the pineal gland as a kindred organ to the pituitary body. So far as physiology and histology are concerned these glands are very much alike. In disease of the anterior lobe of the pituitary, and also in disease of the pineal gland, symptoms relative to the sexual organs are common. Instead of becoming hyperplastic or neoplastic the pineal gland may undergo calcareous degeneration thus causing headache and other symptoms resembling disease of the hypophysis.

PULSE, TEMPERATURE AND TONGUE.*

By F. D. Haston, McAffee

There are many things indeed to consider under a subject of such magnitude, however, in a short paper, it is therefore expedient to merely touch upon a few of the more salient points that concern us in our daily routine as general practitioners.

Through many years of doing the same things over and over day in and day out, it is highly probable that the act of taking temperature, counting pulse and looking at the tongue becomes a subconscious one and we forget the many valuable points of information we should gather in our observation and study of these very necessary and important clinical measures.

It has been well proclaimed by eminent clinicians that no examination does justice to the patient by rendering a conclusive diagnosis on the revealing evidence gleaned from these measures alone and I agree with the assertion, but may I contend that should we ignore these fundamental clinical measures, what sort of an examination and diagnostic conclusion could we favorably submit?

Be it ever so insignificant, it goes without further argument that from the highest and most prominent down to the humblest country doctor way back in the sticks, that these constantly used clinical measures in any physical examination are of paramount importance in the safe construction of a diagnosis if we only correctly interpret their real meaning.

We are taught how to count the pulse and to study its characteristics in health as well as in disease, but in the usual rush of a busy practitioner I dare say that we rarely ever give a second thought to the real foundation and the many little mechanics in our economy that have to take place ere a pulse wave at the wrist is felt.

The centers in the brain that control the circulation are located in close proximity in the floor of the fourth ventricle and they receive a very valuable aid by associating the sympathetic nerves coming down the cord emerging from the region of the third spinal nerve and through ganglia to its point of association with the vagus thus traveling to the heart as the vago-sympathetic and there to join with the vasa motor nerve supply as a conjoined force of control to the heart that goes forth continually throughout our existence, sending waves through the blood channels so arranged and like wise controled by innervation to the walls and valves in the lumen till all our whole economy is fed with life giving elements and the refuse returned for renovation, thus completing the cycle that constitutes a pulse wave.

In disease we encounter many variations from the normal pulse wave due to as many causes, which unless we keenly appreciate the intricate mechanism of this system it is indeed very easy to overlook some vital weak spot that may cause sincere regret.

A rapid pulse is encountered when for some reason the sympathetic nerve centers are stimulated or the vagus centers inhibited. We find this condition as the effect of toxins or poisons on these centers and likewise a slow pulse wave may result by the predominating influence on one or the other of the centers inhibiting or stimulating its action.

Then there are certain other changes due to disease of the blood channels or the heart mechanism that materially change the pulse wave from the normal such as a hardening of the walls or degenerative change in the heart muscle and other organs or vegetations with consequent failure of adaptation of valves, aloof which bring about definite changes with the pulse, thus requiring of us a very close study and analysis of the system all along the line.

A warning is therefore sounded that we should ever keep in mind the real intricate mechanism of circulation of blood and review it over again and again till we have become alert to any diseased condition that may arise to disturb the much depended upon pulse wave at the wrist and be able to interpret their significance on the spur of the moment, so that we can apply the needed supportive measures or the remedy promptly and effectively.

Registering the heat of the human body affected with diseased conditions is a feature in every physical examination that has its place beyond any doubt and should have a thorough interpretation as many times upon this one clinical deviation alone hangs the evidence of some remote pathological process that may be preying upon vital structures.

In high temperatures, as in fever, we have a great disturbance to the reflex centers due to change of material with katabolism much

*Read before the Mercer County Medical Society.

ahead of metabolism which by the presence of toxins lessen the amount of escape of heat by arrest of secretions and excretions and by reducing radiation on account of sweat glands being thus affected.

The instrument used to register the temperature as well as the manner and place about the body are points of much importance.

We should always be sure that the thermometer is as near correct as can be secured and of a type that can be easily read.

Of the places to be preferred for taking temperature the rectum or beneath the tongue should give us more nearly a correct registration if we will only be patient and allow the instrument to say in place a sufficient length of time. It is the concensus of opinion that nothing less than two to five minutes will give us a correct registration depending upon the character of illness under consideration. It goes without saying that under all conditions it matters not what, we should use some dependable antiseptic before placing the instrument, personally I prefer alcohol and wash off with clean water.

It is therefore evident that changes in temperature due to presence of toxins have a definite linking also with the pulse and under many conditions these are affected in like proportion thus pointing to the fact that we must have a clear conception of the mechanism concerned in both pulse and temperature in order to correctly interpret the pathological disturbance in question.

When we approach a patient to make a physical examination, one amongst the first questions we ask, is to see his tongue. It is very evident that we wish to learn something of their condition by the appearance of the tongue. The revealing nature of a sick person's tongue depends much upon our ability to interpret the changes from a regularly normal tongue. Granting that we are acquainted thoroughly with the known characteristics of the normal tongue, there are many variations we may observe under different diseased conditions that affect the body in general, both acute and chronic and it may be well to bring into our minds local manifestations both acute and chronic.

We have a characteristic tongue belonging to different diseases such as typhoid fever, pneumonia and malaria and even when a person is suffering from poor intestinal elimination or a chronic stomach derangement we note a dirty tongue. The gustatory nerve supply to the tongue is also disturbed in many cases of illness and the patient complains of a bad taste or cannot taste anything. Local manifestations such as ulcers are often encountered and we are called upon to interpret the cause.

Thus we readily see that there is much to learn from this observation alone if we only keep in mind the valuable points to be revealed when we make such an impertinent request.

It is plain therefore, that when we take a pulse, register a temperature and look at a tongue, volumes of possible disturbances may be unveiled to the mind alert and able to analyze the interpretation.

A RECENT EXPERIENCE WITH RABIES.

By C. H. Linn, Kuttawa

On July 15th, 1923, a lean hungry sickly looking hound of the mongrel type appeared in the neighborhood of Kuttawa. He really appeared on Saturday, July 14th, where a barbecue was in progress and where he remained most of the day attracting no notice except for the fact that he was considered a stray dog.

On July 15th, he began to wander, making short excursions into the country, and began an aggressive fight on every animal he approached.

About two or three miles out he went to a farm house, the residence of Sam Jones a careful prudent and reliable citizen. The dog rapidly ran into the yard and toward Mr. Jones and some other persons, whereupon Jones threw at him and the dog ran with great speed into the barn lot and instantly Mr. Jones heard a pig squeal long and loud. He promptly went to the lot and the dog ran off, but a pig of considerable size was bleeding near the eye, and it appeared that the pig was probably been bitten inside the upper lip with one tooth and under the eye with another. Mr. Jones at once suspected Rabies and isolated the pig.

On the evening of July 28th when Jones went to slop the pig it acted hungry and went to the trough quickly but its mouth flew open and it could not drink. Next day the animal showed the usual signs of hunger readily recognizing its master but showed more excitement on trying to drink, and so on until often when it would try to drink it would be seized with such violent spasm that it would spring into the air and its back would strike the trough.

The pig died on the evening of July 31st. The pig knew its master to the last and did not fight.

After visiting the Jones farm the dog returned to Kuttawa, attacking every dog or other animal it approached, but always being wary of danger, and running away when man picked up a missile or showed any sign by

word or act of attacking the dog. This seemed to contraindicate rabies to me and nearly caused me to ignore the whole affair.

The dog came on through Kuttawa at war with every living thing, and in passing Pat Mathews, or coming up behind him suddenly bit his hip, but fortunately a memorandum book completely protected the flesh. One mile west of Kuttawa the dog came upon a negro girl 16 years of age and at once attacked her, biting her thigh but the teeth did not appear to penetrate the clothing, although all teeth marks were plainly visible one hour later. However there was a small cut on the hand showing no blood one hour or probably half an hour later when I saw the patient. This attack aroused the thickly settled neighborhood and the cry preceeded the dog to kill him on sight and very soon he approached a son of Ham who proved something of a Benjaminite, for he threw to a hair's breadth knocked the dog down and beat it to death, but not satisfied with that he promptly secured a gun and blew its head to pieces.

Of course my advice to the negro family was to take no chances but I told them that I really doubted that the dog had rabies. They were uneducated, somewhat afraid of Rabies serum, and received much advice to not take the treatment. They finally decided to take the treatment. I at once phoned for Rabies serum, but it was some five days before the first dose was administered. Eighteen doses have now been administered, nineteen days after the infection and the patient shows no unfavorable signs.

This case is unique to me in that the dog was alert active and conscious at all time of any danger to himself, and used good dog sense in running away from a dangerous foe. No one reported the usual froth at the mouth, and he was never seen when he was not active and alert.

The Old Head Injury Case. One hundred old head injury cases were studied by Joseph M. Michael, Minneapolis (Journal A. M. A., April 14, 1923), with special reference to the degree of the vocational handicap, the neurologic complications and the probable factors in their production. His conclusions are: The prognosis for life of the patients overcoming the immediate complications is very favorable, excepting those who incurred penetrating brain injury. Freedom from invalidity is uncommon. Careful, early treatment will do much to prevent chronic invalidity. Increased intracranial pressure and signs of local irritation are the only indications for surgery on the head in the acute as well as the chronic case. Handling of the patients with intractable head injury syndrome constitutes a problem of great magnitude.

HEART-BLOCK.*

By Emmet F. Horine, Louisville

The fact that the majority of cases of defective conduction in the heart are easily overlooked leads me to bring this subject to your attention. True, it is quite easy to diagnose complete heart-block and especially easy when accompanied by the Stokes-Adams syndrome but these clinical entities are rare as compared to the slighter forms of defective conductivity which can be detected only by instrumental means. Lesions of the conduction system are relatively frequent and their recognition is of great importance because such defects usually indicate extensive myocardial damage.

The heart-beat when considered mechanically as merely the result of contraction of the muscle mass with opening and closing of certain valves does not seem markedly complicated. But when we consider the factors that initiate and control the rhythmic beats we are immediately confronted with a marked complexity of processes.

Normal heart action is dependent upon the integrity and proper functioning of the following factors:—(1) The sino-auricular node (pacemaker) which initiates the heart beat; (2) the auricular musculature which transmits the impulses from the sinus and in so doing itself contracts; (3) the node of Tawara to receive the impulses; (4) the bundle of His with its right and left branches to transmit such impulses on through the Purkinje fibers into the subendocardial network and to the ventricular musculature; (5) finally, the ventricular musculature which must respond in a normal fashion. Your attention is called to the fact that the heart presents two distinct systems, namely, the muscle mass proper with its valves and the conduction system. My remarks will be confined to the conduction system and to its failure to functionate properly as evidenced by defective passage of impulses from "pacemaker" to ventricle leading to heart-block of varying degree. The delay in conduction occurs practically always in the bundle of His or its branches although theoretically it could occur in any part of the conduction system. Also it will be necessary to consider the action of the vagus in the production of partial heart-block.

Heart-block may be either partial or complete. Partial heart-block falls into two classes, namely:—(1) delayed conduction; (2) partial dissociation. In man the length of time between the beginning of contraction in the auricle and in the ventricle varies within normal limits between 0.12 and 0.21

*Read before the Muldraugh Hill Medical Society, Elizabethtown.

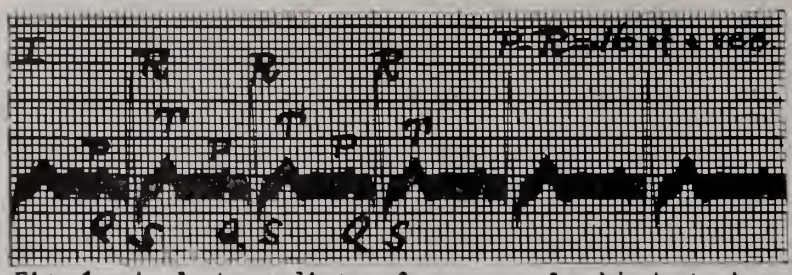


Fig. 1. An electrocardiogram from a normal subject showing the usual electric variations, P, Q, R, S, and T. P represents auricular contraction and Q, R, S, and T represent ventricular action. The horizontal lines are measuring ones being a millimeter apart, the vertical ones are "time lines" and are 1/25 of a second apart. This and all other records are standardized so that one millivolt equals one centimeter.

of a second (Fig. 1). Prolongation beyond 0.21 of a second is never found in normal hearts and represents partial heart-block. In delayed conduction of slight degree each auricular contraction is followed by a ventricular one but after an interval greater than 0.21 of

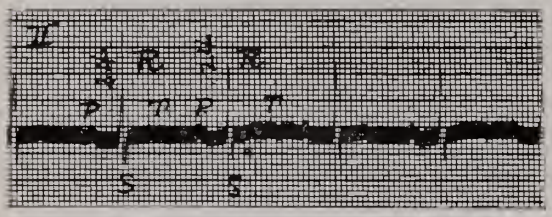


Fig. 2. Delayed conduction which is the earliest stage of heart-block. Note that the interval between auricular contraction (P) and ventricular contraction (R) is .24 of a second. The heart rate is approximately 76 and perfectly regular.

a second (Fig. 2). If the interference to the passage of the impulse becomes greater then occasionally the ventricle will fail to respond to an auricular stimulus leading to the so

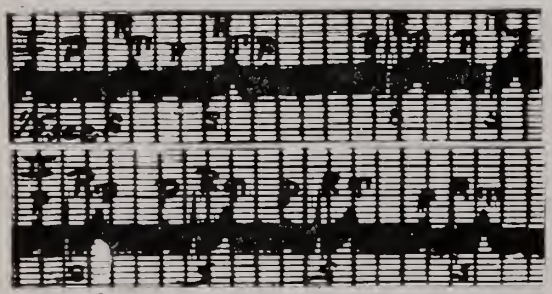


Fig. 3. Dropped beat. Note that the "P-R" intervals are approximately .28 of a second (the "time lines" in this record being 1/5th of a second apart.) The ventricles fail to to respond to the third auricular contraction of lead I.

called "dropped beat" (Fig. 3). With increased interference the ventricle will respond to only every second, third or fourth auricular contraction leading to 2-1 (Fig. 4), 3-1 or 4-1 heart-block or partial dissociation. In complete block the ventricles receive no impulses from the auricles because of complete transverse destruction of the bundle of His. Therefore, the ventricles having lost all auricular influence take on an independent rhythm with a rate of from 30 to 40 per minute. The auricles continue beating at their former rate and instrumental records will show that there is no relationship between the auricular and ventricular beats or complete dissociation is said to have occurred (Fig. 5).

Involvement of the right or left main branch of the bundle of His is spoken of as "intra-ventricular block" or "bundle branch block." The right branch (Fig. 6) is much more frequently involved than the left. Associated with intra-ventricular block there may or may not be partial or complete block of the bundle itself.

The possible factors concerned in the production of heart-block are numerous. The prognosis in each case depends entirely upon the exact diagnosis. Therefore, a mere diagnosis of heart-block is incomplete unless the exact causative factor can be determined. In studying the causes of heart-block it is probably best to divide them into two groups, namely; (1) Intrinsic cardiac; (2) Extrinsic (vagal).

In considering the intrinsic cardiac causes some will be recognized as temporary and amenable to treatment while others are permanent and incurable. The possible intrinsic cardiac causes of heart-block are as follows; (1) Toxic degeneration and oedema; (2) Interstitial myocarditis; (3) Arteriosclerotic processes; (4) Spread of disease from valvular involvement; (5) Fatty degeneration; (6) Syphilis; (7) Tumor; (8) Congenital defects.

Toxic degeneration and oedema of the heart muscle involving the conduction system is seen in the acute infections as rheumatism, pneumonia et cetera. Block due to such causes usually clears up after recovery from the acute disease. In the acute infections mentioned an actual interstitial myocarditis may arise in which event recovery is slower. A round celled infiltration of the bundle occurs which may clear up entirely or on the other

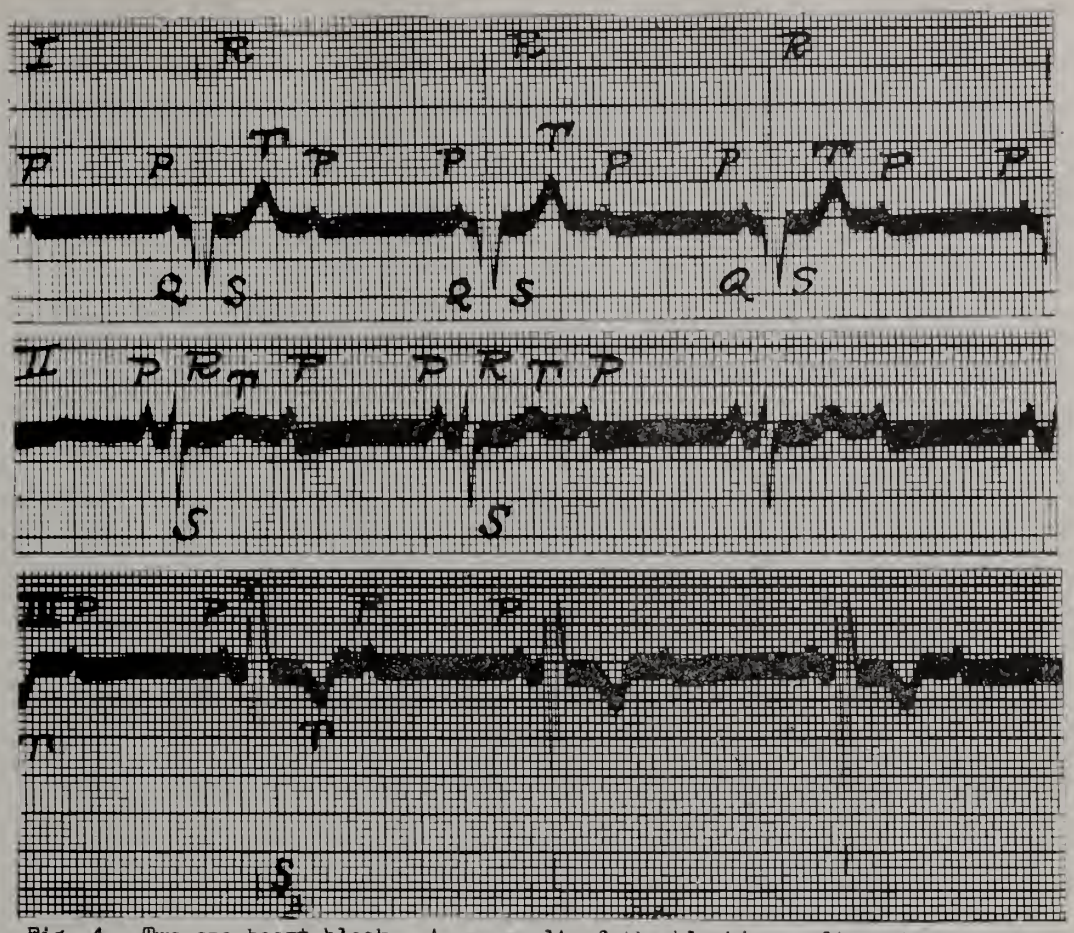


Fig. 4. Two-one heart-block. As a result of the blocking, alternate auricular contractions fail to reach the ventricles. The auricular rate is exactly twice the ventricular. (Patient referred by Dr. Bernard O'Connor for electrocardiographic study.)

hand an increase in fibrous tissue may follow with permanent damage. Still later this fibrous tissue may, at times, become partially or completely calcified.

Arterioselerotic processes involving the branches of the coronary vessels which supply the conduction system result in under-nourishment with consequent degeneration. Also in such processes the nutrient artery of the bundle of His which is most frequently a branch of the right coronary may become thrombosed or it may rupture. In either event the result is the same, namely degeneration of the bundle with a complete heart-block supervening.

The bundle of His lies directly under the mesial leaflet of the tricuspid valve and it is quite easy to conceive of involvement of the bundle through direct extension from an ulcerative endocarditis of the valve. Disease of the aortic valves may spread and involve the bundle, particularly the left branch because of its proximity to it.

The possibility of gummatous infiltration of the bundle should be thought of in every case of heart-block of whatever grade. Where the block is manifestly not due either to an acute process or to vagal influences, a Wassermann test should be made.

Congenital heart-block is quite rare and results from failure of development of the bundle of His. This bundle is really the remains of the muscular wall of the auricular canal which persists after the annulus fibrosus and auriculo-ventricular valves have been formed.

New growths in the heart are extremely rare and the possibility of their involving the bundle somewhat remote. However, both fibromas and sarcomas have been reported.

The extrinsic cause for heart-block is the result of the inhibitory influences of the vagus. Stimulation of the vagus leads primarily to slowing of the heart but if continued a delay in conduction follows. Vagal influences are more marked in cases in which there is a pre-existing block from some other cause. Vagal influences may be either central, direct or reflex.

Central vagal influences may be due to

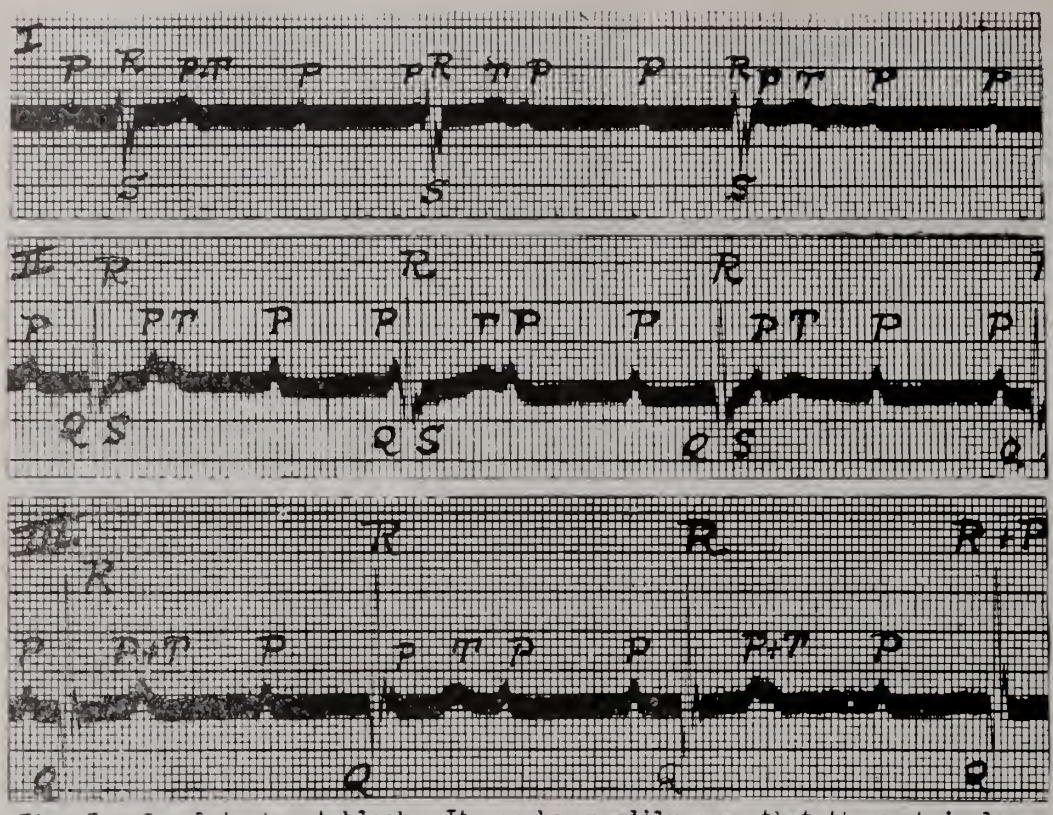


Fig. 5. Complete heart-block. It can be readily seen that the ventricular contractions are entirely independent of the auricular ones. The ventricular rate is approximately 34 and the auricular rate 90. (Patient referred by Dr. A. J. Berresheim.)

bile acids, uremia, digitalis, pressure and inflammation. The bile acids and the retention products in uremia stimulate the vagus center. Digitalis while probably acting mainly by direct stimulation of the vagus center also has direct influence on the heart muscle. Intracranial pressure as well as inflammatory conditions in proximity to the vagus center cause vagal stimulation with consequent bradycardia and later delayed conduction.

Direct vagal influences are caused by toxic material which stimulates the nerve itself such as alcohol, lead and diphtheria toxin. These poisons produce a vagal neuritis which results in irritation with consequent stimulation and a tendency to blocking.

Reflex vagal influences may produce a bradycardia and perhaps actual blocking of slight degree. Such reflex influences may arise from various gastric disturbances.

With a pulse rate of sixty or under one may suspect some degree of heart-block. However, one should auscultate and determine the ventricular rate for it may happen that alternate premature contractions (extrasystoles) are present which are of insufficient strength to open the aortic cusps and thus produce a radial beat. In such a case the ventricular rate will be twice as great as the radial. On several occasions I have seen, in consultation, patients who were thought to have dropped beats and some degree of heart-block when in reality all that was present was an occasional premature contraction which was of insufficient force to open the aortic cusps. Auscultation will differentiate the two conditions, with a dropped beat there will be no sound or movement at the apex whereas with the premature contraction a sound will be heard during the pause. Mention should be made of the fact that it would be impossible to differentiate clinically between a dropped beat and sino-auricular block except by electrocardiographic examination.

With a ventricular rate of from thirty to forty complete block is probably present. Patients exhibiting such slow rates and in addition having periods of unconsciousness can be classed as cases of Stokes-Adams disease. It should be remembered that the terms heart-block and Stokes-Adams disease are not synonymous. It is true that many cases, though not all, exhibiting the Stokes-Adams syndrome have heart-block but it does not follow that all cases of heart-block have fainting attacks. In fact by far the greater number of cases of heart-block, never exhibit any tendency to fainting. For the correct diag-

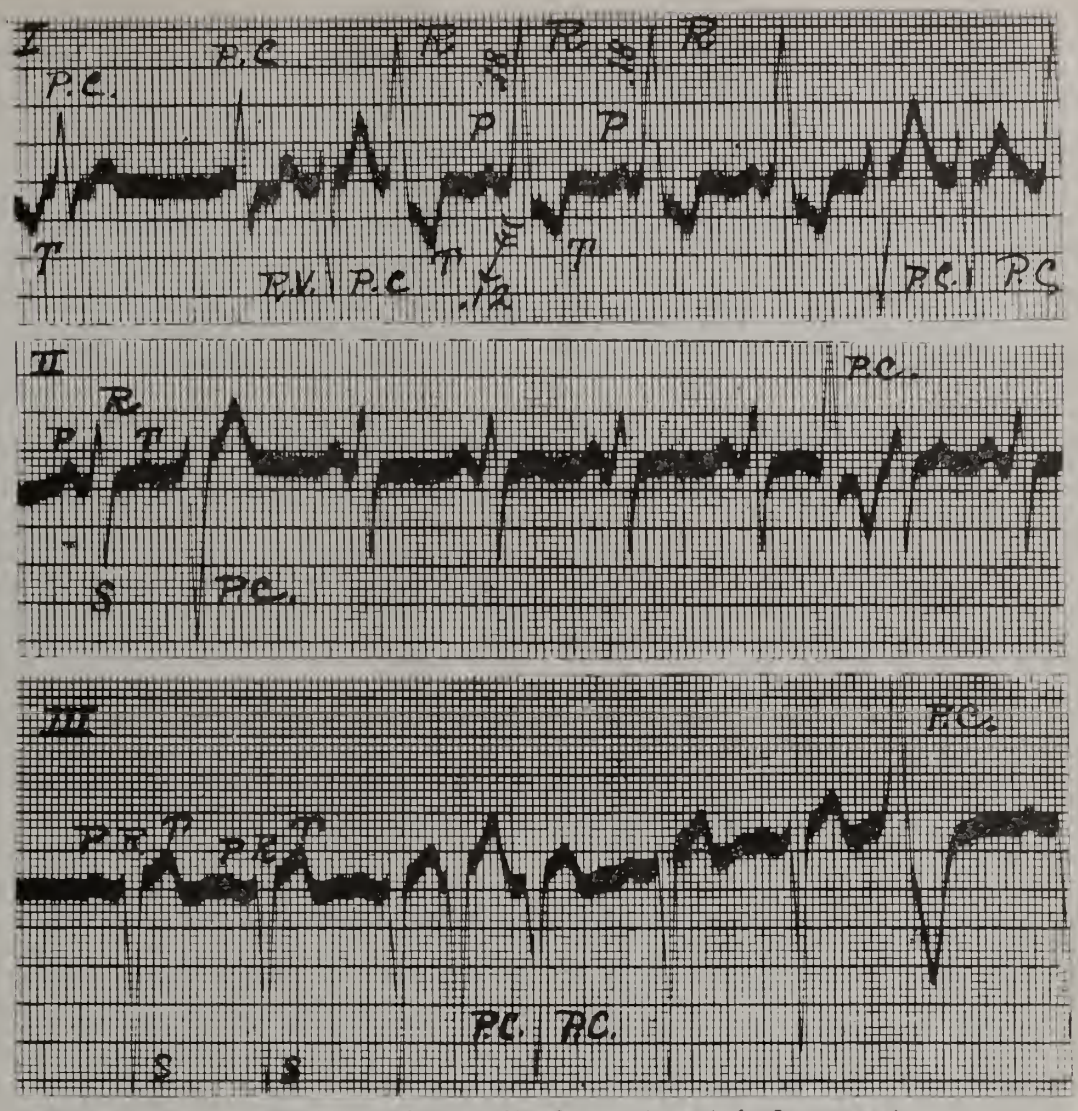


Fig. 6. Right bundle branch block with frequent ventricular premature contractions. (Patient referred by Dr. J. Garland Sherrill.)

nosis the electrocardiographic method offers the most exact means. The lantern slides which I shall demonstrate will show quite clearly how perfect is this method.

Cases of delayed conduction may exhibit no symptoms whatever aside from a slow pulse. During the course of all acute infectious diseases and also during convalescence the physician should be suspicious of a slow pulse rate. Ordinarily the block occurring at this time is quite temporary but it will bear watching because it may indicate beginning myocardial damage.

The prognosis in heart-block may be inferred from what has already been stated. The majority of cases of delayed conduction during and following acute infectious diseases clear up in a short time without treatment. Those that do not clear up in a reasonable time may be considered as cases in which permanent damage has been done. In cases of heart-block coming on in elderly individuals we may take it that we are dealing with rather a widespread involvement of the myocardium. I want to emphasize the necessity for having a Wassermann made in all cases of block that are not manifestly due to acute infection or to vagal influences. In fact it would probably be advisable to have a Wassermann made in every case of block lasting longer than a few weeks.

The strain placed on the heart by a block, either partial or complete, is not great but the factor causing the block largely determines the prognosis. Patients with complete block, who do not have syncopal attacks, may lead fairly active lives for years. The cases of which I have definite knowledge and which have so far ended fatally have died in from one to ten years after the first examination.

In most instances death was quite sudden and was probably due to ventricular fibrillation. The prognosis in cases of congenital heart-block will depend upon whether the absence of the bundle is the only defect present.

The treatment must of necessity be governed by the causative factor. In block which is the result of vagal stimulation atropine will, if given in sufficient doses, abolish all vagal influences. The smallest dose necessary for an adult is a fiftieth of a grain and it may be that even a twentieth by hypo will be required. The use of atropine is not only of value in the treatment of vagal block but it is also of diagnostic worth. In digitalis block due to over-dosage or prolonged usage with cumulative effect atropine is a specific. In block due to intrinsic cardiac defects atropine is of no value.

In syphilitic block due to involvement of the bundle by a gumma, either directly or by pressure, I desire to give a word of caution about instituting too drastic anti-syphilitic treatment. What I have to say may be applied to syphilis of the heart muscle in general. If intensive treatment be used causing rapid absorption of a gumma a defect will be left in the musculature which may result in aneurysmal dilatation or in actual rupture. For this reason mercury and the iodides should be used in preference to the arsenical preparations.

In partial block from any cause digitalis is ordinarily contra-indicated because it will usually increase the existing block. It is for this reason that the promiscuous use of digitalis in every heart case is to be condemned. Occasionally in dealing with a partial block which shows great variability in degree one might cautiously use digitalis for the purpose of increasing the block which in turn would decrease the variability and thus afford relief. In complete block where auricular fibrillation coexists or where the myocardium shows evidence of weakening digitalis is of value and can be safely used.

Adrenalin acts upon the accelerator fibres of sympathetic system to the heart and causes thereby an increased rate. Recently in an investigation on the action of drugs in a case of complete block which I have made I have found a marked increase in auricular but no increase in the ventricular rate with adrenalin. At the time the auricular rate was the greatest the patient stated that he was feeling more normal than he had felt since complete block had begun eighteen months previously. This same sense of well being lasted for more than an hour although there was no change whatever in the ventricular rate or in the block. Since adrenalin seems to cause increased conductivity in the bundle according to Winterberg it could be tried in block but I would suggest small doses. If digitalis is being used then adrenalin would be contra-indicated because experimentally this combination has been known to produce ventricular fibrillation.

The use of oxygen has been advised to cut short the syncopal attacks when the Stokes-Adams syndrome is present. However, since ventricular slowing or standstill often precipitates these attacks it would seem that oxygen could be of limited value only. In one patient under my care at the present time there is frequently a peculiar "full feeling" in the abdomen and chest just prior to the loss of consciousness. No effect from oxygen has been observed but this patient has been advised to assume the recumbent posture immediately upon the appearance of the premonitory signs and thus prevent injury from falling. With this case, adrenalin has lessened the syncopal attacks but has not abolished them.

In conclusion, I would suggest that the possibility of heart-block should not be forgotten. It is not nearly so rare a condition as it was thought to be prior to the more general employment of the electrocardiograph.

Sudden Acute Pain in the Shoulders Associated with Acute Pelvic Pain in Women. I. C. Rubin, New York (Journal A. M. A., April 14, 1923), reports two cases in which sudden acute pain in the shoulders was associated with acute pelvic pain in women, and describes this pain as a symptom of ruptured ectopic pregnancy, indicating subphrenic blood extravasation (subphrenic hemoperitoneum). The mechanism by which these shoulder pains in subphrenic pneumoperitoneum are produced is said to depend on the relations between the diaphragm and the suspensory ligament of the liver. When gas displaces the diaphragm upward, the liver is simultaneously displaced downward. The falciform hepatic ligament is consequently stretched, and thus the phrenic nerve is stimulated. As the phrenic nerve has its origin in the third, fourth and fifth cervical cord segments, and as it actually connects with cervical peripheral nerves supplying the shoulder girdle, pain produced in the diaphragmatic area is referred to the shoulders by sensitized cutaneous nerves of the cervical segments. The first case cited by Rubin was one of bilateral shoulder pains, more intense in the left shoulder in which the pains were caused by a ruptured tubal pregnancy on the left, with a large amount of extravasated blood. In the second case severe pain in the right shoulder was caused by a tubal abortion on the right and moderate blood extravasation.

THE SIGNIFICANCE OF EXTREME IN BLOOD PRESSURE.*

By B. S. Rutherford, Bowling Green

It is interesting to study biologically the human body, and to realize that it is formed of innumberable microscopic cells, each one being a separate and living organism endowed with the elements of life.

In connection with cell life, there are two opposing forces continuously in operation, which really constitute the phenomena of life. They are metabolism and catabolism, or constructive and retrograde metamorphosis.

Constructive metamorphosis means change of matter from a lower to a higher state of organization, which implies growth, assimulation or building up the tissues.

Retrograde Metamorphosis is the opposite, which is the change of matter, especially protoplasm, into a lower state or organization and ultimately into waste products, which really represents the wear and tear of the system.

Each cell entering into the formation of the human body is dependent for its sustenance on elements of nutrition conveyed to it through the arterial system and its various ramifications, and the force that propels these elements to their final destination in the process of nutrition is blood pressure.

The energy furnished to maintain blood pressure is supplied from two sources, the rhythmical contraction of the heart and the resiliency of the arteries, neither of which could accomplish the purpose without the assistance of the other.

Viewing the subject from this standpoint, we can readily appreciate the vital importance of blood pressure and the necessity of maintaining it as nearly as possible at a normal standard.

The arterial system is supplied with circular muscular fibers which continue in their course to the smallest arterioles. They have the power of contraction and expansion and are presided over by two opposing sets of nerve fibers, the vasoconstrictors and the vasodilators, which automatically increase or diminish the caliber of the arteries as the occasion may demand.

There is always blood pressure in the arteries, without it the heart could not propel the blood through the system. Without blood pressure or arterial tonus, the blood would flow through the arteries in an intermittant instead of a continuous stream. The heart would have to supply all the energy to propel the blood through the system, a task which would be incapable of performing and would soon wear it out in its ineffectual effort to do so.

In order that we study blood pressure intelligently from a pathological point of view, it is very essential that we be familiar with the physiological aspect of the condition, with all of its phases and their significancies.

A standard has been established which is generally considered to be correct. A man whose age is twenty should have systolic pressure of 120. A few degrees above or below this point would not indicate pathology, and for each year above that age one half of a M. M. is added.

In life insurance examinations, there is a permissable variation of 17 millimeters either above or below the normal standard. Any further variation would be regarded as pathological and render the applicant an undesirable risk.

The study of blood pressure is comparatively new with the medical profession, and with increased observation and study, there has been a radical change in their views of the significance of its phases. Until quite recently more importance was attached to systolic pressure, but now diastolic pressure is regarded as being of vastly more significance, since it represents the load carried by the heart and the strain to which its musculature is subjected. A diastolic pressure of 100 indicates that the heart is being subjected undue strain, while 110 would be regarded as excessive and would result in rejection for insurance for an applicant by any life insurance company.

Diastolic pressure is the pressure exerted in an artery during diastole. Systolic pressure represents the maximum force exerted within an artery during ventricular systole. The pulse pressure is the difference between the systolic and diastolic pressure.

All phases of blood pressure vary in health and widely in pathologic states. In physiologic condition it may be induced by transitory and unimportant causes to rise or fall beyond the limits of permissable variation and yet have no pathological significance, as in this condition, it is usually of short duration. But a persistently high or low blood pressure, with a few exceptions indicates pathology and requires investigation.

We should always bear in mind that both hyper and hypotension are not diseases per se, but symptoms dependent upon some primary, cause for their existence.

Hypotension is frequently the first symptom that manifests itself in tuberculosis. A persistently low blood pressure, with gradual loss of weight, especially if accompanied with slight elevation of temperature, would be highly suggestive of this disease. The excep-

*Read before the Third District Medical Society, Glasgow.

tion to the rule of hypotension in tuberculosis would be where this disease is associated with nephritis, which is always accompanied with hypertension.

In shock and collapse, we have a sudden and dangerous lowering of blood pressure. This is due to one or two causes.

In case of collapse, it is probably due to the overwhelming of the vasomotor system by circulating toxins which cause vasomotor paralysis.

On the other hand, shock would appear to result from a failure of vasomotor tone, the result of reflex stimulation through the sympathetic system. This sometimes becomes an alarming condition during operations in which the blood pressure has important prognostic significance. If the pressure should fall as low as sixty or sixty-five, we are advised to withdraw the anesthetic and stop the operation. It has been stated that the lowest blood pressure compatable with life is forty or fifty-five M. M. New has observed and recorded recovery after a temporary fall of pressure to fifty M. M.

In cardiac valvular lesions, blood pressure is unaffected where compressation is good, with the exception of aortic regurgitation, which carries with it a persistently high pressure. In broken compensation, the tension is lowered because of muscular weakness of the organ, and assumes prognostic significance.

In typhoid fever hypotension maybe of diagnostic value, as it is characteristic of this disease for the patient to have an extremely low blood pressure, usually below 100 after the patient has taken to bed.

In Addison's disease, the blood pressure is extraordinarily low because of the destruction of the suprarenal glands.

Hypertension is a condition often lurking where it is least expected, there may be no change in the palpable arteries, exeept a slightly undue fullness.

A permanent increase in blood pressure in a young adult or early middle life, in the absence of discoverable changes in the heart, blood vessels, or kidneys is always a sign of chronic toxemia, a poisoning arising from some error in metabolism or deficiency of elimination either intestinal or urinary or both.

A permanent elevation of both systolic and diastolic blood pressure is the most prominent and characteristic sign of well developed chronic nephritis. Sawada states that he has never seen a case of hypertention of more than 170 M. M. in a case of simple and uncomplicated arteriosclerosis. If the pressure should persistently exceed this amount, the case is almost invariably complicated with interstitial nephritis.

Despite the many interpretations placed upon hypertention, it should be always remembered that it is not a disease. It may be an expression of an attempt to maintain physiologic balance. Temporary rises observed in pain, neurasthenia, excitement, and after exercise, bear out this view.

In arteriosclerosis it is nature's method of supplying blood to vital tissues, which may be more or less ischemia, owing to capillary fibrosis.

Hypertention usually exists in toxemia, nephritis, arteriosclerosis, aortic regurgitation, meningitis, exophthalmic goiter and syphilitic aortitis.

The hypertention with which we mostly have to contend is that which is encountered in individuals past middle life, at which age the most of us have been guilty of many acts of indiscretion as to our method of living, which is conducive to its development. While some have recklessly ignored their physical well-being by persistently indulging in the excess of life to an alarming degree.

There are many factors which contribute to this end, among them are over indulgence in eating, excessive use of alcoholic, syphilis, constant worry of business or over mental strain from any cause.

In case of over indulgence in eating, the digestive organs are over taxed, digestion is incomplete, putrefactive changes set up in the intestinal tract, toxins are absorbed into the circulation, their presence excites a low form of endarteritis with thickening of the intima, and gradual developing sclerosis.

The caliber of the arteries are lessened, as a result of which the tissues fail to receive their usual amount of blood, a call is made on the heart for additional energy, to which it dutifully responds by making requisition on its reserve and undergoing a state of compensitory hypertrophy.

As a result of this condition, we have a disturbance of metabolism, the emunctories of the body are over taxed in eliminating the waste or products of catabolism. An additional demand is made on the heart by the kidneys in the course of increased functional activity in order to maintain an adequate circulation. The heart meets the demand by using more of its reserve and continuing to hypertrophy, which is an additional cause of hypertention.

As long as compensation is complete, which may continue over a period of years, the patient may suffer no inconvenience and not be aware of any pathological condition, but the time will ultimately come when the heart, though faithful as it has been in fighting the battle of life, can no longer meet additional demands. Its reserve is all gone, its forces are weakened: it can no longer overcome peri-

pheral resistance and pass all of the blood through the capillaries. As a consequence, it dams back into its chambers, dilatation exceeds compensatory hypertrophy and we may have a murmur of relative insufficiency caused by the regurgitation of blood past perfectly normal valves that can not close the orifices because of dilatation that has occurred in the process of decompensation, other symptoms will follow with which you are all familiar, forming a group which present a clinical picture of cardiac, vascular renal disease.

It is this condition that is a factor in the death of a majority of old people, let the immediate cause be what it may. It is this condition that prevents us from reaching extreme old age and brings about premature senility. For it has been truly said that a man is never older than his arteries.

As to treatment, the time worn adage that "an ounce of prevention is worth a pound of cure" applies here. Precaution for its prevention should be begun in early childhood and observed throughout the life of the individual. Children should be taught that they eat to live and not live to eat. They should be taught anatomy and physiology in school that they may have some conception of the wonderful mechanism and complexity of their organism, and that every injury it receives at any period of life weakens the foundation of its structure and renders it less durable in the conflict of life. By the time this condition is recognized, usually irreparable injury has been done to the circulatory system, and in some instances to the kidneys, and we can only hope by timely advise in regulating the patients' method of living to stay the progress of the disease and ameliorate the symptoms. It is sometimes hard to convince the patient that there is anything the matter with him as he may not as yet have experienced the slightest discomfort because of his pathological condition. If we can succeed in securing his co-operation, he may live to a ripe old age, if not he will inevitably sooner or later succumb to the menace that confronts him, a victim to his own folly.

Since high blood pressure is a physiological process of a pathological condition and nature's efforts to supply the organs with their proper amount of blood under increased difficulties, our treatment should be applied to the cause instead of the pressure which is only a symptom.

We should endeavor to obviate the necessity of further rise in blood pressure by preventing as far as possible the progress of the cause which demands it.

The patient should be made fully aware of his condition and made to understand that his life is in his own hands and he can neither shorten or prolong it.

The business man should curtail his duties and close application to business and take life easy from henceforth. The syphilitic should receive appropriate treatment. The glutton should be made to realize that he is digging his grave with his teeth and advised what and how to eat. All should be impressed with the evil of worry and over mental strain, and the necessity of getting the proper amount of sleep. The nervous and pessimistic individual should be taught to take life more complacently and cease to magnify their imaginary ills and cultivate a spirit of optimism.

Despite these precautions in later stages of this disease, we see many cases whose blood pressure rises and remains at a dangerous height from 200 to 250. In this condition the heart muscles are subjected to a tremendous strain, which it cannot endure indefinitely without using up its reserve and reaching the stage of decompensation; danger signals perhaps have already begun to manifest themselves and the delicate and diseased cerebral vessels are liable under extreme pressure at any moment to rupture followed by the dire results with which you are all familiar. It is at this stage that symptomatic treatment is indicated and from which much benefit may be derived by administration of the nitrites or vasodilaters.

I am aware of the fact that I am opposed by some writers as to this method of reduction of blood pressure on the grounds that we are defeating its purpose in maintaining an adequate circulation. I am upheld however, in my views by Dacosta and others.

Besides, I hold that where nature is over exuberant or delinquent in her duties, it is time for intervention on the part of the physician. If the heart is not too far advanced in decompensation, we may expect to obtain gratifying results from the administration of these remedies. By dilating the arteries, we open up the flood gates as it were, and give the blood a freer transit through its channels. By so doing we obviate the necessity for the time being of high blood pressure by lessening peripheral resistance.

It is true that the effects of nitro-glycerine is transient and will not last perhaps more than 30 minutes, but 30 minutes of partial rest four or five times a day to a heart that has been overworked for years and now laboring under an enormous strain will greatly faciliate it in regaining some of its lost reserve and putting it on a more substantial basis for future work. When I see a patient in this condition, I put him on one hundredth of a grain of nitro-glycerine every 2 or 3 hours. I also put him on a restricted diet and enjoin

rest. If decompensation is far advanced, I put him in bed. It is never my purpose to reduce blood pressure lower than 165 or 170 M. M. After having given him this treatment for a few days, I prescribe sodium nitrite which seems to be not as prompt but more permanent in its effects. If after two or three weeks treatment, the pressure is fairly under control the treatment is withheld. It may be weeks or months before he will need further treatment along this line. The blood pressure should be watched, however, and the same treatment resumed whenever the symptoms demand it.

ADENOMYOMA OF THE UTERUS.* CASE REPORT.

By Louis Frank, Louisville

The following case is reported and the specimen exhibited because of some interesting points in connection with the diagnosis.

Patient, Mrs. W. A. H., aged sixty-four years, came under our observation December 5th, 1922. One sister died of uterine carcinoma; family history otherwise negative. Patient passed the menopause at the age of fifty-two.

Two years ago, that is when sixty-two years old, following extraction of several teeth she had some bloody discharge from the vagina. There was no further vaginal discharge until April, 1922, when there was noticed some bleeding at intervals and this has continued until the present time. Bleeding was always slight in amount. There was no discharge other than as noted, and no odor; no abdominal pain except at very first bleeding; this ceased when she passed blood. There has been no pain since. There has been slight backache at intervals and of short duration. No pain in thighs nor bladder region; no frequency of urination; rarely nocturia. Appetite poor but no indigestion. Intestinal function regular. Patient says she is short of breath on exertion; no cough or chest pains; no palpitation. Has complained at times of pain in cardiac region.

Physical examination: Large healthy looking, well nourished woman. Heart, lungs and abdomen negative. Pelvis: uterus somewhat enlarged and soft; no masses or tenderness.

Examination with speculum showed a small amount of blood coming from the uterus. There was no odor and no evidence of pus. When the sound was introduced into the uterus some obstruction was noted near the right cornu and bleeding became more profuse when that point was reached. Based on these findings and the history of intermittent uterine bleeding we made the diagnosis of early carcinoma of the body of the uterus probably involving the right cornua.

Further examination of this individual revealed that she had a very high percentage of sugar in her urine, viz., four-plus. She also had 400 m. mg. of blood sugar to one c.c. of blood, which is quite a high percentage.

Blood examination: Blood pressure systolic 176, diastolic 84. Hemoglobin 100; erythrocytes 4,200,000; leucocytes 9,000; differential, polymorphonuclears 71; lymphocytes 26; basophiles 1; eosinophiles 2.

Urinalysis: Color amber; reaction acid; specific gravity 1035; albumin one-plus; sugar four-plus; indican one-plus; pus cells five to seven in each field; otherwise negative.

The question then arose as to the advisability of operating for carcinoma of the uterus in a patient with diabetes. However, in conjunction with Dr. Hayes Davis who had charge of the patient medically, within five or six days we had her urine sugar free, and six days later her blood sugar was reduced to normal.

Operation, December 23rd, 1922, under gas-oxygen anesthesia; sub-total hysterectomy. Six inch mid-line incision; uterus small; tubes and ovaries normal; no enlarged glands in pelvis. The pelvis was very deep and the vagina short; for this reason we were unable to do a complete hysterectomy. Broad ligaments clamped on either side and uterus with cervical mucosa excised. The cervix was closed, the broad ligaments sutured to the stump and the entire area peritonealized. Because of the short vagina, and the fact that the patient was a diabetic and prolonged anesthesia contraindicated, a pan-hysterectomy was not done. About fifteen days after the operation 50 mgm. radium introduced into the cervical stump with the hope of preventing recurrence of the carcinoma.

Immediately after operation the patient again showed some sugar in her urine and also an increase in the blood sugar. There was also a tendency to become acidotic. Dr. Davis injected soda solution into the breasts which was followed by disappearance of the sugar. When dismissed from the hospital January 10th, 1923, she was sugar free and in fairly good physical condition.

Macroscopically the specimen removed looks like a polypoid carcinoma of the right horn of the uterus. Pathological examination was made by Dr. Stuart Graves and his report follows:

Gross description: Specimen consists of incised, amputated uterus with portion of cervix, 60x45x22 mm. Pinkish gray and smooth. Endometrium pale yellowish gray, slightly

*Clinical report before the Louisville Medico-Chirurgical Society.

blood stained and rough. Attached to one portion (sides) is a mass irregularly spherical and 30 mm. in diameter, pale yellowish gray and moderately firm. Cut surface of which is pale pinkish gray with a few porous areas. Another mass is conical in shape 255 mm. long and 14 mm. at base and extends downward with apex in cervix. Mass pinkish gray, blood stained and slightly rough. Cut surface pinkish gray and moderately smooth. Another portion shows rounded masses 7 to 15 mm. in diameter, pinkish gray, mottled with colorless areas and having a slightly granular appearance. Wall contains masses averaging 10 mm. in diameter and having characteristics of leiomyomata.

Microscopic description: Uterine wall shows sclerosis and calcification of arteries. Endometrium on this section is thin and atrophic. A few glands are dilated and distorted with slight infiltration of stroma with round cells.

Section of encapsulated tumor shows atypical bundles of smooth muscle characteristic of leiomyoma.

Sections of polypoid masses show atypical glandular structures in adenomatous formation. These glands are lined with columnar epithelium in single layers without mitoses. There are no solid masses of cells and no papillary projections into the glands.

Gross and microscopical diagnosis:

Leiomyomata (fibroids),

Chronic atrophic endometritis,

Multiple adenomatous polypi,

Sclerosis and calcification of uterine arteries,

No positive evidence of malignancy. (Stuart Graves).

We are all familiar with the work of Cullen on adenomyomata of the uterus which are much more frequent than we have heretofore thought. I have searched the literature rather thoroughly, and this mass is about as large as any I have seen or that have been described by others.

We also have had under observation quite recently a woman who was thought to have an inoperable carcinoma of the cervix. A portion of the cervix was removed by another surgeon and she was treated with radium and the bleeding ceased. She has since been admitted to the hospital with a large mass in the broad ligaments. We have given her several blood transfusions. She has some changes in the right lung thought to be due to pneumonia, as she had gone through an attack of typical pneumonia in another city. However, it is questionable whether this might not be metastasis. The specimen removed in that case was also classed as adenomyoma.

I think these are very interesting cases. It is believed cases of adenomyomata of the uterus occur more frequently than we have thought. In the principal case reported no curetting was done to make the diagnosis, believing it cancerous. The added condition of a very serious diabetes with high percentage of blood sugar, and the fact that the patient was carried through her operation successfully, makes the case of exceptional interest.

DISCUSSION

F. W. Rankin: The case reported by Dr. Frank is interesting, and, so far as my information goes, the specimen is unique. I have never before seen such a large adenomatous polyp.

I especially wish to compliment Dr. Frank on the manner in which he treated his patient. Considering the history as related and the age of the patient, in ninety-nine out of every hundred cases the diagnosis of uterine malignancy would be made. He was confronted by a most serious complication in that the patient had diabetes, yet he proceeded to do exacly what was proper, he gave her the only chance for prolongation of life if the tumor were malignant, as he has every reason to believe it was when he decided to operate. Another thing he did which I think was eminently proper, i. e., he discontinued the operation without forcing it too far. When he found pan-hysterectomy would be very difficult technically, and to subject the woman to prolonged anesthesia would markedly increase the clinical dangers, he stopped there and later used radium in the cervix. These are two very important points.

I believe that often in the presence of diabetes, when the patient can be gotten sugar free, operation may be safely undertaken. However, as in the case reported, it should not be forced too far, it should stop at the point of greatest safety to the patient.

J. G. Sherrill: The case reported by Dr. Frank is exceedingly interesting. Any woman who has uterine hemorrhage after the climacteric should be suspected of having malignant disease. A few cases have been recorded where women of seventy had uterine hemorrhage without malignant disease being present, the bleeding being due to simple endometritis, but such instances are quite rare.

I recently had under observation a case in which there was some uncertainty about the diagnosis and would like to make a brief report because it was similar to Dr. Frank's case. Every subserous uterine tumor, whether it be adenomatous, myomatous or carcinomatous, usually causes hemorrhage. It is not always possible to determine the character of the growth until after removal and pathological examination.

Three weeks ago I saw a woman who gave the history of having had uterine hemorrhage four months. She was fifty years old and her menstrual function had always been regular, there had been no cessation, increase or diminution in menstruation until four months previously when she began to bleed between periods. No clots had passed but the flow persisted. She is a business woman and became alarmed about her condition fearing it might be malignant. She consulted her family physician who applied iodine to the cervix, gave her various internal remedies, etc., and the hemorrhage still continued.

When she came to me vaginal examination showed the uterus not much enlarged, the os was sufficiently patent to permit introduction of the tip of my little finger, and a small mass was felt. I thought she had an ordinary uterine polyp, but examination with the speculum failed to reveal a polyp. I then made the diagnosis of uterine myoma probably of the submucous type; she was single and had never been pregnant. In the majority of such cases the tumors are myomatous in type.

The patient returned a week later for further examination. At that time bleeding was profuse and a tampon had been introduced by the family physician. I removed the tampon but hemorrhage was so copious that it had to be re-inserted and she was sent to the hospital for operation. Hysterectomy was performed two weeks ago.

Before beginning the operation it was thought wise to make another vaginal examination. Upon introduction of my finger through the os a round smooth object was felt in the uterus. This object, instead of being a polyp, was a round, tightly packed, piece of cotton the size of an almond. The piece of cotton was removed through the vagina, but after this had been done I still did not know "what I was up against" therefore proceeded with the abdominal section and removed the uterus. When the organ was split after operation the mucosa was found smooth but there was a small tumor attached to the uterus subperitoneally. This was sent to the pathologist who reported it was a myoma, and that there was no evidence of malignancy.

The family physician was later asked if he had ever introduced any cotton into the uterus of this patient, and he replied in the negative. It is evident, however, that someone had done so and the cotton had remained in the uterus for an indefinite time.

Stuart Graves: The combination of simple muscle tumors, usually known as myofibromata or leiomyomata, and adenomatous tumors which have become malignant, or adenocarcinomata, is not so very rare. In a woman of the age of Dr. Frank's patient, presenting the symptoms and history he has described, it impressed me that the combination of multiple polypi and multiple leiomyomata, as shown by the pathological examination, was quite unusual. The history would have led any surgeon to make the diagnosis of malignancy.

Wm. J. Young: In discussing the subject of malignancy, we must appreciate the fact that we do not know what we are talking about to begin with. We know absolutely nothing about the etiology of malignancy other than the fact that irritation is supposed to be the determining factor.

Dr. Frank is very fortunate in being able to select his cases. So far as the use of radium is concerned, it is like the etiology and diagnosis of malignant disease,—we do not know just what we are doing. Sometimes we flatter ourselves that we know something about the treatment of malignancy and hope to accomplish some wonderful results only to find that metastasis has already occurred, and instead of benefiting the primary lesion we hasten metastatic involvement and ultimate death of the patient.

I want to go on record as saying, and I know it is the absolute truth because I have done it myself, that we do with radium just what the surgeon often does with the knife, that is distant metastasis having occurred without our knowledge, we sometimes hasten death of the patient.

Not long ago I used radium in a case of recurrent cervical carcinoma, the patient having been treated with radium and it was thought a favorable result secured; but there was a recurrence and radium was applied by me with the hope of prolonging life for at least a few months. The only result accomplished was to "send the patient onward" probably four or five months before she would ordinarily have died from the disease. When radium was used the patient already had metastasis in the liver which I did not fully appreciate; radium was applied to the cervix and high voltage x-ray over the abdomen which simply hastened metastatic involvement and the woman died about five weeks later.

There are some people who are crazy about radium and the roentgen-ray in the treatment of malignancy they tell us they do not stimulate extension of metastasis, etc.; but I know that I have done so although the treatment was applied with good intentions. We do stimulate metastatic extension with radium and the roentgen-ray just as the surgeon does with his knife. If the surgeon operates for cancer of the lip, for example, where there are metastatic glands in the cervical region, he stimulates the process, and we do the same with radium or the x-ray.

Let it be repeated that surgery, radium and the roentgen-ray will stimulate any malignant process which has extended beyond the confines of the original growth. The time to treat malignant disease successfully by any method of procedure is before metastasis has occurred.

Dr. Frank is to be congratulated upon the result secured in the case reported. As has been said by other speakers, the history and clinical findings were indicative of malignancy of the uterine body. As the tumor was non-malignant in type there is no reason to presume there will be a recurrence.

Louis Frank: The occurrence of polypoid masses and multiple fibromata which have undergone adenomatous changes must be uncommon. Cullen called attention to these in his book published several years ago, and has since written numerous articles on the subject of adenomyoma and fibroadenoma of the uterus. His book contains some beautiful illustrations of the various types of uterine tumors, some of which developed in the uterine muscle and in myomatores growths from the glandular structure of the uterine cavity.

What made this case of more interest to me was, as Dr. Graves called attention, the fact that although this woman had passed the menopause, she still retained some glandular structure in the uterus. This is supposed to undergo atrophic change at the menopause. There was still sufficient adenomatous tissue remaining to develop the type of tumor described.

A word about the treatment of cancer in general: I believe the modern surgeon does not stimulate malignancy because he removes the involved glands before attacking the original growth. I would also like to say that we do not treat cancer of the body of the uterus with either the roentgen-ray or radium. The results of treatment of cancer of the uterine body by total extirpation have been so brilliant and followed by so few recurrences and such slight mortality that nothing will ever take the place of surgery in such cases. If there is one type of cancer that is amenable to radical surgical intervention it is cancer of the body of the uterus.

Cancer of the cervix is an entirely different proposition and is not included in this discussion. The only reason we treated this patient with radium was that we had not performed pan-hysterectomy. Had this procedure been followed radium would not have been applied.

Ben Carlos Frazier: Dr. Frank's remarks remind me of a case I would like to briefly report because of its similarity. Two weeks ago I was called by one of my patients to see her mother who was visiting here and had been having profuse uterine hemorrhage. The patient was a Jewish woman sixty-three years of age who had passed the menopause at fifty-six. She gave the history of having been a diabetic for twelve years for which she had been treated in Baltimore where she lives. She had been visiting another daughter in California and had come from Los Angeles to Louisville. On the way she had more or less uterine bleeding, and by the time she reached here the flow had become profuse which frightened her daughter very much. Before using a speculum digital examination was made and a mass discovered protruding from the cervix. I told the woman that I thought she had a uterine polyp which was much more simple than they had suspected. She said she wanted to return to Baltimore for treatment, but a few days later they telephoned me that they had decided to have operation performed here. She was accordingly sent to St. Joseph's Infirmary where Dr. Irvin Abell removed one large polyp and several smaller ones from the cervix and uterus by means of curette and cautery.

This woman was sixty-three years old and a diabetic, yet she had no trouble following the operation. I thought the case might be of interest because it is similar in some respects to the one Dr. Frank has reported.

Wm. J. Young: Most patients with cervical or uterine carcinoma that I see have reached the inoperable stage. Within the last two years I have not seen a case of cancer of the cervix or uterus which was considered operable. Whenever the case is operable the surgeon operates and the patient is then referred to me for post-operative treatment. I cannot too strongly emphasize the statement that in every case of carcinoma of the cervix or uterus roentgen-ray examination of the chest should be made before any operation is undertaken, just as is done in carcinoma of the breast, to determine whether or not metastasis has occurred. If there is metastasis in the lung in carcinoma of the breast, we know there is nothing more to be done, that "the book is closed." The same rule applies to cancer of the cervix or uterus, when metastasis has occurred in the liver or lung. The roentgen-ray or radium may prolong life for a time, but will not produce a cure once in a thousand times. That is one of the reasons why the x-ray and radium are in bad repute today, the patient has been promised too much. The roentgen-ray and radium have never had a change to show what they can do because of lack of opportunity. Therefore just how much good these agents can do in carcinoma of the uterus or breast remains a question. Surgery has been used in the treatment of such cases for years and years, and today surgery is practically a closed book. Surgery can go just so far and no further, but one surgeon can do more than another. What radium and the roentgen-ray can do we do not know.

When metastasis has occurred in some vital organ the only thing the x-ray or radium can do is to stimulate metastatic extension just as the knife stimulates it. Whenever there is metastasis in the lung or liver it is useless to try to do anything by either surgery, radium or the roentgen-ray, other than treat the metastasis.

Louis Frank: I agree with Dr. Young in the statement that whenever metastasis has occurred in the liver or lung treatment is useless because the patient is doomed anyway.

In regard to cancer of the breast: I am reminded of a remark made years ago by the late Dr. John B. Murphy; he said that most patients with cancer of the breast died of spinal metastasis. I am now trying to trace the patients upon whom I have operated for breast cancer to determine what has been the cause of death. The reason for this is that during the last few years I have been impressed with the number who have died from spinal or bone recurrences. Some of them have complained of sciatic pains or "rheumatism" and have died with every clinical evidence of spinal cord pressure. Roentgen-ray examination in many such cases failed to show any vertebral changes. Sometimes bone metastasis have been noted within a few weeks after operation, even the flat bones of the skull being involved.

Dr. Moore has had considerable experience in the sugar tolerance curve in various diseases, and I would like for him to speak along that line. I have operated upon diabetics without knowing it, for instance emergency cases of strangulated hernia, suppurative appendicitis, etc., and have never seen any trouble following operation in such cases during recent years. Even if the patient is diabetic, if we can get him sugar free, and unless acidosis develops, operation can be performed with comparative safety.

John Walker Moore: In regard to the sugar tolerance curve: It seems quite a coincidence that two cases have been reported here tonight, both patients having non-malignant uterine disease, and both diabetic. We know that in cases of uterine carcinoma we get a high sugar tolerance curve very much like a diabetic curve, but as we get a similar curve in certain other diseases, in hyperthyroid cases, etc., it is of very little diagnostic value. In uterine malignancy this curve is noted, and it seems it also occurs in benign uterine tumors. It would be interesting to investigate a few cases of uterine fibroids to see whether we get this same sugar tolerance curve in such cases. We have an excellent opportunity to do this at the city hospital because at least thirty per cent of the colored women admitted to the gynecological department have uterine fibroids.

Many papers have been published during the last five or six years on the sugar tolerance curve and its importance in diagnosis. However, I have never seen one in connection with benign tumors of the uterus.

J. G. Sherrill: In regard to the question of diabetes: We have been too much afraid in the past to operate in the presence of diabetes. A point that has been strongly impressed on my mind is that diabetics die from two causes: first, from damage done by the anesthetic (chloroform or ether) on the liver cells; second, death occurs from over-dieting, i. e., dietary restrictions are pushed too far. Men who have gone along for fifteen or eighteen years under normal conditions without any intercurrent illness will stand a certain amount of sugar in the urine because their resistance is unimpaired. Let them have an acute infection and if they are dieted too strenuously they develop acidosis and die from that cause.

THE TREATMENT OF EMPYEMA BY THE CLOSED METHOD.*

By W. C. Simmons, Smiths Grove

I thank your arrangement committee for the courtesy of extending to me a place on your program for the day. I shall make no apology for what I may say, as I feel sure you will accord me the privilege of saying what I please. I dare say no one would criticize or speak evil of the dead and dying. What I mean is that in the preparation of this paper, you will appreciate the fact that I belong to the coterie of individuals who were once legion, but like the veterans of the Civil War, we are reduced to a small band. I mean we are witnessing the passing at this very time, the last of that most useful of men, the general practitioner, the country doctor; the old family physician. It is indeed pathetic and will remain so until the sane and sensible member of our profession rise up and demand a revision of our medical laws and break down this thing that looks like a medical monopoly.

Our medical college association has prescribed a course of study and time, extending over six years, which bars most young men from entering the profession of medicine. My son, a poor boy, who after completing his common school and then entering Annapolis, graduated from that institution after four years of continous study, standing high in his class, and after all he was then told, when thinking of taking up medicine that he must take two years pre-medical before he could enter. Six more years; preposterous; no such course is necessary in order to make good doctors. Any young man should have a chance at medicine on a reasonable proposition. Any boy who has finished his high school course should be allowed to enter a medical school and graduate in four years at the longest. I have been in my present location for a third of a century and I want to tell you what has happened to the doctors with whom I came in frequent contact. I mean the country doc-

*Read before the Third District Medical Society, Glasgow.

tors in and around my town when our practice overlaped. Twenty are dead, and who has taken their place? Not one in ten and as a consequence the people who, in years passed, enjoyed the comforts of a doctor in their homes, when that most distressing time comes as it does come to every family, when they feel then their utter helplessness, without some sort of medical advice.

Six years and at least that many thousand dollars to put a boy through a medical school, I say no such thing is necessary, neither time or money to qualify a man of reasonable intelligence to go out and make a useful and successful practitioner of medicine. It is not necessary that we be laboratory experts or Bacteriologists, we cannot do a general practice and at the same time be proficient in microscopical histology. What the country needs today and will need it worse tomorrow, is men who have the guts and enough common horse sense to go out into the rural districts and go to work where there is plenty to do, the "harvest is white and the doctors are few."

The trouble now is too many men in the large towns and cities.

I asked the President of the Kentucky State Board a few months ago how many men they could spare out of the city of Louisville? He said they could easily spare one hundred and never miss them. Men who were willing to just eek existence. Another trouble as I see it, too many men are trying to specialize; too many are trying to do surgery. What the country needs is some regular doctors, doctors who know a little something about all of the essential things and not too much about any one thing in particular. The whole field of medicine is within ten inches of our eyes, thanks to the man who created our microscope.

In that field a vast kingdom of life was discovered, namely the micro-organisms and among some of those organisms those infections agents whose entrance into our bodies and then the multiplication there occasions their corresponding distress.

It was not until about the time that I began to study medicine that any one advanced the theory of the germs as being the cause of disease.

I remember well how Dr. Thomas Briggs ridicnled the idea as late as 1887. He was a great man, a good surgeon, a fine teacher in his day, Dean of Vanderbilt University, but did not believe in the germ theory. He spent hours in explaining idiopathic inflammation and the character of pus, laudable and otherwise. Though this was long after Lord Lister had proven the advantages of antiseptic and aseptic surgery and that it was not necessary that we have pus laudable and otherwise. Most of the discoveries as the causative agents in the production of disease seems to date from 1880 to 1890.

Bacteriologists through long and patient study and investigation have made wonderful revelation. It is now universally admitted that each infectious disease is caused by its own specific germ. Infectious agents are true growths and they are bred true. So if we sow turnip seed we do not get carrots. If we sow tubercular bacilli we get tuberculosis and not some other pulmonary disease.

Now as I said in the outset of this paper, it is not possible for the general practitioner to go into the minutiae of each and every disease but it is possible for him to have a gross understanding of medicine and surgery. If he applies himself properly, he may be a good diagnostician and the man that can make an early diagnosis is indeed a splendid doctor because if he cannot apply the necessary means for relief, he may direct his patient to some one who can. And right here I would like to insert a word, the average general practitioner has through timidity more than through inability or ignorance been too ready to send his patient to some specialist, thereby losing all his best fees and contributing to some other the fee that should have been his own.

Some of the best doctors I have known died poor men after years of slavish drudgery. Such should not have been; every man if he has informed himself can do the larger part of all things that he has been in the habit of sending to specialists.

I heard the late lamented J. N. McCormack say in one of his public lectures that the average country doctor was too poor to practice medicine. I know it to be a fact; we are poor just because we have been tributary to other doctors when at the time we should have done it ourselves.

A man who is able and intelligent enough to make a quick diagnosis is capable of doing nine tenths of all the surgery that presents itself within his practice.

So now after having delivered myself of these preliminary remarks I will proceed to take up the subject assigned me.

Empyema

I had the good fortune some three years ago of witnessing an operation for empyema done by Dr. Mozengo of Indianapolis, known as his "closed method of treatment." I think it is one of the greatest single steps in surgery of the chest known. It at once reduces it from a major operation to a minor one. It is so simple and easy that any doctor can do it, and if the doctor is not handy the village

blacksmith or the local garageman can do it.

When I was preparing this paper I picked up my latest work on the practice to post myself on the diseases that we most often have an empyema as a complication or sequel to and it was full and complete up to the time when we discover we have fluid in the chest then this authority said if we had an empyema we should call in the services of a surgeon.

The surgical treatment of empyema has always been very unsatisfactory and the morality very high. Owing to the prevalence of influenza each season together with our usual pneumonia of different types I find empyema much more frequent than formally.

The surgical treatment of empyema has been divided into two general methods, the open method as practiced by most operators and the closed or "occlusion" method. as practiced by Mozengo and the one to be preferred to all other methods because of its many advantages and greatly lowered mortality..

Of course to be frank with you I cannot base this article on any good number of cases that I have done myself, my series is not long yet sufficiently long to warrant me in recommending it to you. I am not a surgeon and that is why I prepared this paper to show the little fellows like myself how they can do some things and thereby keep their patients at home and hear the pleasing jingle of the coin in their own pockets.

The method in brief is the introduction of a small tube into the empyema cavity by means of a trocar and cannula. (The outfit such as I show you is put up complete by Beck & Co., Rutherford, N. J.)., and the removal of the fluid by the suction of a one half ounce asepto-syringe. The tube is held air tight by the chest wall and the secretions are removed from two to six times a day, followed by cleansing the cavity with saline or Daken's solution, and later a 2% solution of liquid formaldehyde in glycerine.

The operation is without shock, a few drops of apothsine will prevent pain. A stab puncture is made just large enough to admit the cannula. The chest at full inspiration, shoulders forward and a little vaseline on the cannula will facilitate the introduction of the trocar. The cavity is emptied at the operation but slowly, so as to allow accommodation of the circulation to the change of pressure. Cases operated on earliest after onset of disease gives the quickest and best results. The dressing consists of a small pad of gauze, pads not over one or two inches square. The two first should be split half way so they can straddle the tube one from either side, then thrust a No. 0 safety pin through side of tube then the last pad two inches square with a hole punched in the center for the tube. All is held in place with four strips of adhesive so as to form a square. If you have not carelessly made your skin stab too large, the chest wall will fit snugly around your tube, consequently you will have no escape of fluid around your tube and no necessity for changing the dressing. One dressing is sufficient for several days or weeks as the case may be. The point of election in general empyema is the eighth space post axillary line. The point of necessity will of course depend on an exploratory needle findings.

The trocar should never be introduced except at the very point where fluid has been found. If we get pus when the needle point is no more than half inch inside the cavity there will be no danger of injuring the lung, but by using a short blunt pointed trocar there is only slight danger to the lung.

The tube should be about 15 inches long and just small enough to enter your cannula. It should extend inside the cavity from 3 to 5 inches and have 4 to 7 large fenestra inside the tube to facilitate the removal of fluid, especially when fibrin clots are present. The fibrous exudata however is soon dissolved by the powerful solvent action of Dakin's solution. If it is not convenient to use Dakin's. Dr. Mozengo says Chlorozone tablets act quite well. Personally I have not used chlorozone.

The treatments vary according to the condition of the patient and the cavity. The treatments are given rather frequently the first day or two Say some four treatments a day or until the fibrinous exudata has been dissolved and the secretion checked, which may be from one to three days. The treatments may now be reduced to two a day and after the first week I have gotten along fine with one treatment a day, but I am sure if we would treat more vigorously we could terminate the case earlier.

It is best that the doctor give the first treatments and then once a day to watch the progress. While the other treatments may be given by some member of the family or letting the patient treat himself.

To demonstrate that the drainage is complete a known amount of fluid can be injected into the cavity and all recovered immediately, regardless of the position of the patient, the same thing is true of air.

Adhesions soon form because of the frequent and thorough cleansing of the empyema cavity and the plura being held in contact by the constant negative pressure.

An idea can be had of the size of the cavity by opening the tube and allowing air to enter as the lung collapses and counting the syringefuls of air aspirated form first few days after the operation. The amount may

reach 40 to 60 syringefuls. When the number has been reduced to 8 or 10 syringefuls usually in two weeks after the operation, from 5 to 10 cc formalin and glycerin can be injected once a day for not longer than a week.

When the resultant secretions become a clear sterile sero-sanguineous fluid. 5 cc of formalin glycerine should be injected, the tube removed and the sinus closed with adhesive plaster. This closes the surgical technique It is not altogether simple, yet it is not at all difficult as it might seem to some. There is a right way to insert the tube and a right time to remove it, but the larger amount of success depends upon the post operative treatment which should be individualized in every case.

My first case after learning this method of treatment was Charles W., a patient of 18 years age who had had influenza and pneumonia. The pneumonia persisted beyond the time I expected the crisis. I began to discover the evidence of the fluid in the chest some chills and sweats followed in just a few days. I had an enormous amount of fluid but I did not operate continued Iodid Potash etc., for weeks, hoping to have the effusion absorbed. Finally I made an exploratory puncture at the point of election with a long needle and the pus was readily withdrawn. I then called in the services of another doctor of about the same caliber as myself and we proceeded to operate the old and generally accepted way. We resected the 6th rib, went beautifully down on the plura, invaded the plura to a considerable depth. We thought surely we must be through it and into the lung but got no pus. So we decided best to go no deeper. Dressed the wound and trusted to results, pus was there the diagnostic needle had proven that, but for some reason we did not know then, that I know now. We did not strike the gusher. In just ten days from the time of this operation, this flood of pus burst forth through our opening and almost drowned the man in his bed. Of course it is easy to understand that in this long standing case the plura was greatly thickened, it was more than one half inch thick and we just did not get through. Unfortunately for my patient, I had not yet learned of the Mozengo method, so he had a very long eventful recovery, but the chief event was that I did get this improved method in time to restore him to health and perfect physical condition; some six months after, we had remaining from our operation a suppurating sinus. I converted the old chronic open empyemic cavity into a closed cavity by enlarging the sinus with a pair of forceps, and introdueing a rubber tube of proper size to fit snugly and aspirated a large quantity of pus. Then gave frequent treatments of Dakin's solution for three weeks when I began the formalin glycerin injection for about another week, withdrew the tube, closed the sinus after thoroughly swabbing with iodine and adhesive. In a few days my man was well, has been ever since and is a hard working farmer in my locality today He can thank Mozengo.

Second case, Jno. L. V. Kyrock, age 37.

This man's case was a tragedy. He was the victim of two mistaken diagnoses. One of them I am frank to say was made by myself. I saw him several days after he was supposed to be convalescent from an attack of "flu". At that time he was running some temperature with marked tenderness in the right iliac region. So in as much as they had been having some typhoid fever in the home, several months previous, I diagnosed typhoid, and did not see him any more for two months. During that time he developed a troublesome cough and called in the services of another doctor, who diagnosed his case as pulmonary tuberculosis, proposing to cure him for the sum of $150.00 cash, which was paid to him in a lump sum. The patient grew rapidly worse from day to day, until finally his father asked me to go back and see him, which I did. To my astonishment, when I had his chest stripped bare for inspection it was plainly evident that he had a large quantity of fluid in it. He was greatly emaciated from long weeks of pain, fever and cough, profuse expectoration. He was barely able to sit up, so we carried him in an automobile to Bowling Green, where it would be more convenient to treat him.

Dr. J. H. Blackburn and I operated on him following the Mozengo method. We aspirated some seven or eight hundred cc pus. Then injected the cavity with normal salt solution and aspirated that following with Dakin's solution. These treatments were repeated three times a day for the first three days when the patient left the hospital and went to his father's who lives five miles from my place. After that he came to my office morning and evening for his treatments driving a mule to a "buck board" over a very rough road. I continued this treatment twice a day for ten days then one time a day up to the last which was then three weeks from the time we operated. The cavity was so small I could not get much Dakin into him. I then injected 2 drams of formalin glycerine 2%. Undertook to remove my tube which had never been moved nor the dressing changed during all this time and to my amazement the thing would not come out under the powerful influence of the Dakin's solution. With its solvent action and great healing properties the lung had expanded rapidly because

of the closed cavity, so that adhesions formed much earlier than expected and in doing so, grasped my tube, rendering it necessary to make some traction when the tube did come out. The fenestra, some of them, were closed with new adhesive tissue, grown into and clinging to the tube. So you can readily see I treated this case longer than was necessary or at least I should have withdrawn the tube little by little instead of leaving the whole 5 inches within the cavity. A piece of adhesive plaster over the small hole closed this case for good. The man had gained 20 pounds in the length of time and continued to gain his former good health and weight.

Case 3. This is a rather unusual case, from the fact that I never saw this man at all. He also lives at Kyrock on an adjacent farm to this man Vincent, whose case we operated. Ranzo Cash was this patient and was operated on by Dr. J. H. Blackburn by the Mozengo method, and for some reason this man returned to his home in just a short time after the operation. His neighbor Vincent who had just recently been dismissed by me, called me over long distance phone to find what to do as Cash had broken his solution. He wanted me to see him but as it was a long trip and uncertain pay I told Vincent to go ahead with the treatments just as Dr. Blackburn had directed, except to use salt water rather than Dakin's. A teaspoonful of salt to a pint of sterile water, which he did for three weeks. When he called me again and said he thought his man was well I told him to withdraw the tube and close the opening as I had done for him. He did so, with splendid results. The man was soon strong and well.

I mention this to show that the great advantage of this is after all the "closed method of treatment."

I mention one other case and then summarize as I do not want to make this paper too long.

A patient of Dr. Floyd's near Brownsville was brought to my office. A child some three years of age. The doctor had already discovered the fluid, the diagnostic needle proved to bring pus. I sent the child home and Dr. Floyd and I did the "Mozengo." We did it with an ordinary trocar and cannula and an improper size tube, which converted it into an open instead of a closed job. With all the attending evils of an open operation, compressed collapsed lung, discharging sinus, weeks longer to get well, contracted chest wall and crippled lung.

Conclusions:—

The surgical treatment of empyema by the closed method as taught by Mozengo can be successfully done by any doctor in the home and in the country practice.

2nd. The mortality is much lower than by any other method.

3rd. The post operative treatment can be done in great part by a nurse or some member of the family.

4th. This method causes the least amount of pain and discomfort to the patient.

5th. The dressings are small and last for several days without causing skin irritation, and does not constrict the chest.

6th. The uncomplicated cases of empyema are kept out of bed.

7th. Constant negative pressure gives maximum amount of expansion to the lung.

8th. Production of great economy of time, labor, and dressing material.

9th. Dakin's solution because of its great solvent and bacteridical action is the best solution to use in the preliminary treatment of an empyemic cavity to dissolve the fibrinous exudata and partially sterilize the cavity. To complete sterilization after the preliminary treatment with Dakin's and to prevent recurrence, a nice remedy to use is a 2% solution of liquid formaldehyde in glycerine.

Bacteriostatic Action of Dyes on Streptococcus Viridans. Of the forty-one dyes used by Norton and Davis in their experiments only sixteen showed bacteriostatic action in dilutions of 1:1,000 or greater. Of the sixteen dyes which showed bacteriostasis, eight belonged to the triphenylmethane group and six to the diphenylamines. Of the two remaining, one was an azo and the other a diazo compound. Of the eight triphenylmethanes, six were triamino compounds and two were diamino compounds. There was no difference between the action of the dyes on the strains of Streptococcus viridans and those of the pneumococci. A survey of the chemical structure of these dyes shows that, with one exception, all contained three benzol rings, either attached to a single carbon atom as in triphenylmethane, or connected as in anthracene. In some cases, a ring carbon atom is subsituated by nitrogen. In addition to the three benzol rings, all these active dyes contain two or more amino groups. The hydrogen atoms in these groups were all substituted with alkyl radicals in those dyes showing the greatest inhibitory action. In most instances, this alkyl radical is the methyl group, but in brilliant green—the most active dye—ethyl groups are present. Acid dyes or salts of acid or basic dyes were inert. The substitution of an hydroxyl radical for a methyl group decreases the inhibitory power.

CASE REPORTS: (1) PYLORIC ULCER IN NEGRO: (2) GASTRIC ULCER: OPERATIVE RESULTS.*

By J. Garland Sherrill, Louisville

Case 1. D. E., negro, aged twenty-five years; occupation, laborer, admitted to the Louisville City Hospital September 23rd, 1922, with complaint of abdominal pain after eating, vomiting, constipation. Family history negative. Past history, mumps, measles and scarlet fever during childhood. No sore throat. Neisserian infection three years ago; sore on penis two years ago, diagnosed syphilis; received six injections of arsphenamin. Patient has complained for eighteen months of constipation, pain, belching, vomiting, after meals. Habits regular; no alcohol. Has lost thirty pounds in weight during the last three months.

Present illness: Onset eighteen months ago with pain, belching, nausea and vomiting after meals. There have been periods of two weeks to four months without symptoms. Pain at first appeared one to two hours after eating; at present comes fifteen to thirty minutes afterward and is present after every meal. Pain in epigastrium of a "boring" character. Pain relieved for a time by alkalies, and has always been relieved by vomiting. Liquid or bland foods give less discomfort than solid or heavier foods. There has at times been some difficulty in swallowing. Vomiting occurs after practically every meal. One month ago vomited about a cupful of dark blood thirty minutes after eating. At no other time has he had "coffee ground" vomitus or "tarry" stools. There has been some belching and regurgitation; some loss of appetite, mainly through fear of the consequences of eating. Recently has vomited food eaten one or two days previously. Exacerbation of all symptoms during the last three months; has lost thirty pounds weight during that time.

Physical examination: Development fairly good; evidence of loss of weight with muscular irritability. Mucous membranes of good color. Slight impairment of percussion note over left apex; otherwise lungs and heart negative. Slight tenderness on deep pressure in epigastrium and tenderness over left border of spine about tenth interspace. No abdominal rigidity; no masses. Spleen barely palpable; liver extends about two finger breadths below costal margin. Genitalia normal. Rectal examination negative. All reflexes normal.

Laboratory tests: Urine, negative; phenolsulphonephthalein, 57% (two hours); gastric juice, free HCL absent; total acidity, 12%; lactic acid, absent; blood, negative. Blood examination: leucocytes, 7,000; erythrocytes, 4,680,000; hemoglobin, 80%; polymorphonuclears, 74%; eosinophiles, 1%; lymphocytes, 25%; Wassermann, negative. Roentgen-ray investigation: complete gastric retention of six hour meal; three-fourths retention of twelve hour meal; filling defect at pylorus. Impression: ulcer of pylorus with stenosis.

Operation, October 2nd, 1922: Pylorus scarred, hard, mass about size of walnut. Pylorectomy and posterior gastro-jejunostomy performed. Opening in meso-colon sutured to gastro-jejunal anastomosis. Several enlarged glands along lesser curvature removed.

Pathological report: chronic ulcer of pylorus; chronic lymphadenitis; no evidence of malignancy; no report as to lues.

NOTE: The patient made an essentially uneventful recovery; is now able to take any foods allowed without discomfort; has gained thirty pounds in weight.

Case 2. T. D., aged forty-seven; occupation, car cleaner; admitted to Louisville City Hospital October 27th, 1922, with complaint of epigastric pain, nausea, and vomiting. Family history negative except one brother died of tuberculosis and another brother is insane. Past history, usual diseases of childhood; malaria about twenty years ago; Neisserian infection at age of twenty-one; tonsillitis occasionally; acute rheumatic fever eighteen years ago for which he received treatment at Hot Springs, Ark., for three months. Patient is constipated, has had "stomach trouble" consisting of epigastric pain, nausea, vomiting, flatulence, belching, for the last twenty years, periodically. All teeth extracted. Habits fairly regular; uses tobacco; no alcohol.

Present illness: Patient has had "stomach trouble" periodically for the last twenty years. There have been periods of as long as six months when he was free of symptoms. The symptoms consisted of pain after meals usually appearing one to two hours after eating; pain followed every meal. Location of pain in epigastrium. Pain was relieved for a time by soda and by various other prescriptions given him by his physician, but after a short time none of these were longer of use. From the onset pain has been relieved by vomiting; not relieved by eating. Severity of pain influenced by type and quantity of food; always there has been this sequence, food, comfort, pain. There has been no hematemesis nor melena; appetite has been good until recently, and then it was for fear of pain that the patient refrained from eating. Sour eructations, belching, flatulence,

*Clinical report with exhibition of one patient before the Louisville Medico-Chirurgical Society.

nausea, and vomiting, after meals. Vomiting has at times been self-induced to relieve the pain. Has vomited food eaten on previous day. During the last two months there has been marked exacerbation of all symptoms and moderate loss of weight and strength. Constipation present for a number of years.

Physical examination: Development good; some evidence of recent loss of weight with muscular irritability. Mucous membranes slightly anemic; no jaundice. All teeth extracted. Heart and lungs negative. Just to left of spine there is some tenderness on pressure over the tenth and eleventh interspaces. Slight epigastric tenderness; no masses felt. Genitalia normal. Reflexes normal.

Laboratory data: Urine, not pathological; phenolsulphoneph-thalein, 45% (two hours); gastric analysis, free HCL 20%; total acidity, 47%; lactic acid, absent: blood, negative. Blood examination: leucocytes, 7,600; erythrocytes, 3,660,000; hemoglobin, 65% (Talquist); polymorphonuclears, 79%; eosinophiles, 1%; lymphocytes, 27%; transitionals, 3%. Wassermann, negative. Roentgen-ray investigation: gastric retention of over one-half of six hour meal with marked filling defect at pylorus. Diagnosis: ulcer of pylorus.

Operation, November 15th, 1922: A scarred, indurated area about 1½ to 2 cm. in diameter on lesser curvature of stomach and about 1½ cm. proximal to pylorus. A partial gastrectomy and posterior gastro-jejunostomy was performed.

Pathological report: lumen of pylorus measures 8 mm.; just proximal to pylorus is an ulcer 20 mm. in diameter and 3-5 mm. deep; edges slightly rolled and deep red. Gross and microscopic diagnosis: subacute and chronic ulcer.

NOTE: The patient has made a perfect and uneventful recovery from operation.

DISCUSSION

Charles G. Lucas: There is no question that in cases such as the first one reported by Dr. Sherrill, where pyloric obstruction is purely mechanical from ulcer or tumor, relief can be secured only by the invocation of surgery. I saw the patient while he was in the hospital and concurred in the diagnosis of pyloric obstruction probably from ulcer.

Based upon the history and physical findings in this case the question arose in my mind as to the possibility of syphilis being the cause of the pyloric obstruction, but was informed that the Wassermann test was negative.

In a case of this kind where mechanical obstruction exists I believe the proper treatment is pylorectomy and posterior gastro-enterostomy. I agree with Dr. Sherrill that it is important to suture the gastro-enterostomy site to the mesocolon.

Wm. J. Young: Dr. Sherrill stated that the first patient had syphilis two years ago for which he was given six arsphenamin injections. This treatment probably caused disappearance of the clinical symptoms but could have no other effect so far as syphilis was concerned. It is well known that arsphenamin does not cure syphilis; it has to be followed by the administration of mercury to effect a clinical and serological cure. If this man simply had six injections of arsphenamin and no mercury, the treatment would have no bearing whatever upon the development of tertiary lesions. In other words, if the man had syphilis of the stomach it would necessarily be a tertiary manifestation, and the treatment which he received would not prevent this.

J. Garland Sherrill (closing): In the first case, regardless of the negative Wassermann report, I was impressed with the fact that the patient might have syphilis. At operation the tumor which occluded the pylorus contained fungus-like tissue not unlike the soft material noted in syphilitic lesions. The specimen was sent to the laboratory with the request that it be carefully examined as I thought the patient might have syphilis of the stomach. The operation was performed as much for the existing obstruction as for the vomiting and other evidences of ulcer. In the pathological report on the specimen syphilis was not mentioned.

The second patient presented a definite history of gastric ulcer. At operation there was noted considerable narrowing at the lesser curvature and the ulcer was almost healed.

My experience has been that ulcer of the stomach or pylorus in the negro is comparatively rare. I recall having seen only one other similar case. The reason for this may be that colored people have not had proper observation and ulcers have existed which have never been detected.

ERRATA

In the "President's Retiring Address," by Dr. Robert T. Hocker, Arlington, in a recent issue of the journal there were a number of typographical errors. These were: "I began the study of medicine, October 15th, 1866," instead 1856. "Hypodermic medication began about 1870," instead 1867. "In 1775, (instead 1875) When the Birth of our great nation, etc." "During our (instead of) Saviour's etc," "Lieutenants" omitted before names of Robertson, etc." "Dr. Brashear" should have read "Dr. W. L. Brashear."

NEWS ITEMS

PROGRAM OF THE DIVISION FEDERATION OF WOMEN'S CLUBS DEPARTMENT OF PUBLIC WELFARE FOR THE BIENNIAL PERIOD, 1922-1924

The two years that have passed since the creation of Division of Child Welfare in the Department of Public Welfare of the General Federation of Women's Clubs have been marked by definite efforts on the part of club women to better the conditions of child life. To earnest-minded women, however, these efforts are but first steps in a work which will of course, take time to accomplish. It is, therefore, with the idea that the same fundamentals established at first as a basis of work are retained as the ideals for the next biennial period. These fundamentals are:

1. The Public Protection of Maternity and infancy.

2. Universal Child Health.

The aim, then of all clubs should be to make definite progress towards these goals.

1. THE PUBLIC PROTECTION OF MATERNITY AND INFANCY.

Much of the energy of club women so far directed toward this end has had special reference to the passage of the Sheppard-Towner bill. This is now happily an accomplished fact, but the principles for which this bill stands challenge the attention of club women. The administration of the bill will be the real test of the wisdom of its passage, and it is of prime importance, therefore, that women take an active part in carrying out the provisions of this act, which has possibilities of such inestimable benefit to mothers and their children. What is already being accomplished in many of the states in the few months since the passage of the act is really an inspiring story and should do much to win universal approval for its provisions.

Women have been the victims from time immemorial of all sorts of misinformation and "old wives' tales" on the subjects of prenatal, maternal and child care. Now that these new opportunities for the dissemination of accurate scientific knowledge are being opened up, women should use their organizations freely and fully as a means to promote the spread of such information and make it available to every mother and prospective mother in every community. Clubs should open their doors for conferences and lectures on the vital subjects of prenatal and maternity care and the hygiene of infancy, and take the initiative in arranging for groups of women and girls to receive instruction from trained scientific people, whose services will be made available under the Sheppard-Towner act. Clubs should also join heartily with other women's organizations to form state and local committees to extend such services, so that they may effectively reach as many women as possible.

Prenatal Care and Maternity Service:

Every advance in Knowledge of the hygiene of maternity and infancy emphasizes the need for prenatal care. The diet, habits, health and mental attitude of the prospective mothers of today will have a profound effect upon the next generation.

Moreover, the figures show that the number of deaths of women due directly to child-birth is not being lowered. More knowledge as to prenatal care and better obstetrics can alone accomplish this greatly desired result. Women must be taught to demand a higher type of care in child-birth than has been available generally in this country, and this demand must be met by greatly increased facilities for medical and nursing care at maternity.

Club women can render no finer, more practical service than aiding state and local officials to establish maternity and child health centers, where education and advice can be given to mothers as to their own well being and that of their children, and where good obstetrical service can be arranged for. One state operating under the Sheppard-Towner act plans a maternity and child health center for every county. Can not the Division of Child Welfare in each state adopt this as an ideal, and pledge its active support toward realizing such an ideal by the next biennial convention?

Pre-School Age:

Such health centers should carry a special service for the pre-school age child. This part of a child's life has been well called "the neglected period," because even where infant life is well safe-guarded and health education is developing in schools, the child between two and six has been singularly uncared for. This is the period when contagious diseases are most generally contracted, with so often fatal or crippling results, when on the other hand bad conditions of eyes, ears, nose, throat and teeth are most easily corrected. The value of periodic physical examination of children of pre-school age cannot be over-estimated. A child who enters school with all his physical defects corrected, with teeth in good order, who has been taught good food and health habits, is ready to profit by the educational advantages offered him and loses little time from his school life.

Know Your Own Children!

Specific questions to be considered on child health are included in this manual in connection with those relating to other phases of child life, in the hope that they may stimulate interest in a more thorough survey.

QUESTIONS FOR PRELIMINARY STUDY.

Health:

How many babies are born in the town, city or county each year?

How many babies died under one year of age?

How many mothers died in child-birth last year?

Is the housing adequate and sanitary in the community?

Are houses screened and all vaults fly-proof in rural districts?

Is the water supply pure?

Is the milk supply guarded by proper inspection, pasteurization and the tuberculin testing of cows?

Are the health authorities active in preventing the spread of contagion?

How many children die of contagious diseases each year in the community? Is vaccination for smallpox required?

How many crippled and physically handicapped children are there in the community? (See work of club women in Montana.)

What is being done for their relief?

Are there public health nurses in your town or county?

How many child health centers are there in your town, city or county?

Do these centers give advice and prenatal care to mothers?

Do they include health service for the preschool age child?

For the child of school age?

Schools and Health:

Are the school houses sanitary?

Is there an abundant supply of pure water?

Is fresh air admitted to the school rooms at all times?

Do the highest educational standards prevail?

Are teachers well paid and comfortably housed?

Is there a scale in every school?

Are the children weighed and measured regularly?

Is health teaching included in the regular curriculum?

Is a dipper used for drinking purposes in your school?

Is time given for training in health habits?

Is a child's health record sent home on his report card?

Are the children given physical examinations?

Is there a school physician? A school nurse?

Are children's eyes tested, with follow-up system to insure correction?

Do the schools provide dental inspection, with follow-up for correction?

Is milk provided for the children in school?

Is there a hot lunch available for all the children?

Are there special provisions for undernourished children?

Are there provisions for daily rest periods for undernourished children?

Are nutrition classes conducted for the benefit of such children?

Study Classes and Loan Libraries:

Literature for such classes and courses of study for clubs and mothers' groups will be furnished by your Chairman. Suggestions for club papers and sources of material for essays will be provided upon application. Books and pamphlets will also be sent, as loans, to clubs and individuals who have not ready access to such material.

Your Chairman wishes to recommend to all women, particularly the chairman of committees on Child Welfare, the regular reading of the following magazines:

Mother and Child, published by the American Child Health Association, 532 17th St, Washington, D. C.

The Farmer's Wife, Webb Publishing Co., 55 E. 10th Street, St. Paul, Minn.

The American Child, published by the National Child Labor Committee, 105 East 22nd St., New York City.

Series of Health booklets, "The Human Machine," "The Expectant Mother," "The Baby," "The Preschool Child," "What to Eat," etc. 25c and 30c each, National Health Council, 370 7th Ave., New York City.

Health Education Series 5c and 10c each. Send for list of Publications Bureau of Education Dept. of Interior, Washington, D. C.

Publications Childrens Bureau, Dept. Labor, Washington, D. C. Free.

State Bureaus of Child Health in U. S. A. Free.

Woman's Home Companion Magazine Reprint on Infant Preschool Child Health, 381 4th Ave., New York City.

"List of References on Child Health" American Child Health Association, 532 17th Street, Washington, D. C.

Write Mrs. Ira Conch Wood, 848 N. Dearborn Street, Chicago, for lists of exhibit material, slides, films etc., without cost except transportation.

Mothercraft publications, Miss May Bliss Dickison, Trinity Court, Boston, Mass.

Prenatal Letters, Leaflets and Bulletins free, Bureau of Child Hygiene, State Board of Health, 6th and Main St., Louisville, Ky.

Dr. and Mrs. I. H. Browne, Winchester welcome the arrival of a daughter, June 17.

Dr. P. W. Bushong, Edmonton, Ky., has the distinction of having more titles than any physician in Kentucky. On his letter heads he can put any of the following:

President of the Sulphur Well Medical Society, (Four Counties) - Barren, Hart, Green, and Metcalfe; County Demonstration Agent, U. S. Department Agriculture, President of the Metcalfe County Sunday School Association, Presi-

dent of the Metcalfe County Medical Association, Chairman of the City Council, Edmonton, Kentucky, President of the Golden Rule Nursery Company, Physician to Metcalfe County House, Referee of the Metcalfe County Dental Society, Member of Kentucky State Medical Association, Member of American Medical Association, Member of the Pension Examining Board, Proprietor of the Ravenna Stock Farm, Member Local Board, Selective Draft, Deputy Fish and Game Warden, Captain, M. R. C. U. S. A.

The Walnut Log Medical Society will meet at Reelfoot Lake October 17-18. An interesting program has been arranged, all members of county medical societies anywhere can become a member of this society on application.

This society was organized by the members of the Fulton and Hickman, Kentucky, and Obion and Dyer County, Tennessee, Medical Societies for the joint purpose of Scientific Inspiration and Social Recreation.

Those desiring to become members of this Society should communicate with the Secretary at once as only a limited membership can be accomodated this year.

IRA PARK, M. D., Secretary.

P. O. Box 252, Union City, Tenn.

BOOK REVIEWS

International Clinics. A quarterly of illustrated clinical lectures and especially prepared original articles on Treatment, Medicine, Surgery, Neurology, Paediatrics, Obstetrics, Gynaecology, Orthopaedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and other topics of interest to students and practitioners by leading members of the medical profession throughout the world. Edited by Henry W. Cattell, A. M., M. D., Philadelphia, U. S. A., with the collaboration of Chas. H. Mayo, M. D., Rochester; Sir John Rose Bradford, M. D., London; Hugh S. Cumming, M. D., D. P. H., Washington, D. C.; William S. Thayer, M. D., Baltimore; John G. Clark, M. D., Philadelphia; Frank Billings, M. D., Chicago; James J. Walsh, M. D., New York; A. McPhedran, M. D., Toronto; Charles Greene Cumston, M. D., Geneva; Sir Humphry Rolleston, K. C. B., M. D., D. C. L., London; John Foote, M. D., Washington, D. C.; Seale Harris, M. D., Birmingham, Alabama; Charles D. Lockwood, M. D., Pasadena, California; Correspondents: A. H. Gordon, M. D., Montreal; James Burnet, M. D., Edinburgh.

Volume II. Thirty-third Series, 1923. J. B. Lippincott Company, Publishers, Philadelphia and London.

The following are some of the subjects discussed in the volume:

Insulin, by Professor A. McPhedran and Dr. F. G. Banting, of Toronto, Canada, with papers on its clinical use by Dr. Seale Harris, of Birmingham, Dr. Louis P. Hamburger, of Baltimore, and Dr. Orlando H. Petty, of Philadelphia.

Tularaemia, a new disease of man found in the United States from the Pacific to the Atlantic Coast, by Dr. Edward Francis, of the U. S. Public Health Service.

Allergic Diseases, including diagnosis and treatment of bronchial asthma, urticaria, migraine and epilepsy, by Dr. W. Storm Van Leeuwen, Director of the Pharmaco-therapeutic Institute of Leiden, Holland.

Electrocardiography, with glossary of terms used in this newest aid to the diagnosis and treatment of heart lesions, by Dr. John Miller Wilson, of Pasadena, California.

Blood Transfusion, by Dr. Charles Goodman, of New York City.

Rontgen Rays in General Practice, by Doctors Groover, Christie and Merritt, of Washington, D. C.

Chorea, by Dr. James Burnet, of Edinburgh, Scotland.

Ten surgical topics are discussed, and there are many other medical papers of interest to students and practitioners.

1922 Collected Papers of the Mayo Clinic, Rochester, Minn. Octavo of 1394 pages, 488 illustrations. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $13.00 net. W. B. Saunders Company, Philadelphia and London. 1360 pages of new thought and practice developed at the bedside, at the operating table, and in the laboratories of the Mayo Clinic.

144 articles covering the entire field of surgery by William J. Mayo, Charles H. Mayo, and their Associates.

488 beautifully reproduced illustrations, for the most part showing steps in diagnostic and operative technic.

The work is, as usual, arranged regionally, insuring instant and complete access to all work on the region in question.

The only way in which the year's work at the Mayo Clinic at Rochester and the Mayo Foundation at the University of Minnesota School of Medicine can be obtained in one volume.

Every page of value to the surgeon; every article presenting many points of help to the practitioner.

Practical Dietetics with reference to diet in health and disease by Alida Frances Pattee, graduate Department of Household Arts, State Normal School, Framingham, Mass. Former Instructor in Dietetics, Bellevue Training School for Nurses, Bellevue Hospital, New York City. Former Instructor at Mount Sinai, Hahnemann and The Flower Hospital Training Schools for

Nurses, New York City; Lakeside, St. Mary's Trinity and Wisconsin Training Schools for Nurses, Milwaukee, Wis.; St. Joseph's Hospital, Chicago, Ill.; St. Vincent de Paul Hospital, Brockville, Ontario, Canada.

Fourteenth edition, completely revised. The latest dietetic text issued since the publication of the "Recent Outline of a Course of Study in Dietetics" issued by the American Dietetic Association. Practical Dietetics follows this outline, also the outline arranged by the National League of Nursing Education. 12 mo. cloth. 687 pages.

Price $2.60 net, postpaid. ("Teacher's Dietetic Guide" covering State Board Requirements and Examination Questions in Dietetics given gratis with each copy of Practical Dietetics). With Pattee's Hand Bag Diet Book, $3.20, postpaid. A. F. Pattee, Publisher, 134 South First Ave., Mount Vernon, New York.

Practical Dietetics is the latest and most authoritative dietetic text issued since the publication of the "Recent Outline of a Course of Study in Dietetics" issued by the American Dietetic Association. Pattee's Teacher's Dietetic Guide—given gratis with "Practical Dietetics"—includes this outline with specific reference to pages in "Practical Dietetics" where replies may be found. "Practical Dietetics" also follows the outline arranged by the National League of Nursing Education.

The Theoretical and the Practical side of Dietetics are so tretaed as to insure the student's application of theory in practice. Reference to a recipe automatically calls attention to its function in nutrition. Special emphasis has been laid upon the source and value of the A, B and C vitamines and the recipes in general use today.

Collaborators. Professor Mary Swartz Rose of Teacher's College, New York City; Harriet T. Barto, Assistant Professor of Dietetics, University of Illinois; Emma F. Holloway, Supervisor of Institutional Work and Hospital Dietetics, Pratt Institute; Frederic W. Howe, Director of School of Household Science and Arts, Pratt Institute, Brooklyn, N. Y., have very kindly assisted in the arrangement of the theoretical portion of the work.

Diet in Disease has been arranged under the personal supervision of leading members of the medical profession, each giving diets used in his own highly specialized field.

The Author acknowledges the assistance of such eminent authorities as Dr. Warren Coleman, Dr. Elliott P. Joslin, Dr. Frederick M. Allen, Dr. Max Einhorn, Dr. Herbert S. Carter, Dr. B. Franklin Stahl, Dr. L. Emmett Holt; Bellevue Hospital, St. Luke's Hospital, New York; Loomis Sanatorium, Loomis, New York; Massachusetts General Hospital, Peter Bent Brigham Hospital, Boston, Mass.

Particular attention has been given to this phase of dietetics. Diseases best treated by high calory, salt-free diets, etc., are especially grouped to emphasize their importance. Methods of calculating these diets are also given.

Diets in general use today have been correlated in Practical Dietetics. It is not necessary to consult other references for these special and popular diets.

The Form and Functions of the Central Nervous System, an introduction to the Study of Nervous Diseases, by Frederick Tilney, M. D. Ph. D. Professor of Neurology, Columbia University; Attending Neurologist, the Presbyterian Hospital, and the New York Neurological Institute, Consulting Neurologist, Roosevelt Hospital, New York, and Henry Alsop Riley, A. M., M. D. Associate in Neurology, Columbia University, Associate Attending Neurologist, New York Neurological Institute; Attending Physician, Neurological Department, Vanderbilt-Clinic, New York foreword by George S. Huntington, Sc. D., M. D., Professor of Anatomy, Columbia University. Second Edition, 591 figures containing 763 illustrations of which 56 are colored. Paul B. Hoeber, New York, Publishers, Price $12.00.

This work is designed to fill the gap between morphology and the practical requirements of clinical medicine. It aims to visualize the living nervous system, to make accessible an appreciation of its vital relation to the functions which go to make up life as well as the defects in these relations which result in disease.

The Infant and Young Child. Its care and feeding from birth until school age. A manual for Mothers. By John Lovett Morse, M. D., Edwin T. Wyman, M. D., and Louis Webb Hill, M. D., of Harvard Medical School and Children's Hospital, Boston. 12 mo. of 271 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $1.75 net.

In this little book the writers have endeavored to tell mothers what they should know in order to intelligently feed and care for their children from the time they are born until they are six years old. They have attempted to anticipate and answer the questions which mothers are in the habit of asking about the care of their children and the details of their daily life. They have said something about the disease of infancy and early childhood, but only enough to aid the mother in determining whether her child is ill or not and to enable her to do something for her child until the doctor arrives. It is not intended in any way to take the place of a physician, when child is ill, but simply to enable mothers to take better care of their children when they are well, and to carry out the physician's orders more understandingly when they are ill.

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COUNTY SOCIETY REPORTS

Casey:—At the regular meeting of the Casey County Medical Society the following officers were elected:

Wiser Cox, President; W. J. Sweeney, Secretary and C. B. Creech, Delegate.

Others present were: I. S. Wesley, J. N. Haney, J. F. Hammond, Oscar Dunham.

W. J. SWEENEY, Secretary.

Breathitt:—The Breathitt County Medical Society met August 14th, for the purpose of electing a delegate and alternate for the State Medical meeting to be held at Crab Orchard, Sept. 17 to 20th, all the physicians in the county were present except one. We had a nice meeting, everything working in harmony at the meeting on that day. We made arrangements for a banquet to be held in Jackson in the near future in honor of the physicians and their wives and to invite Dr. Estill, of Lexington, to attend same.

Wilgus Bach was chosen as delegate and C. H. Hurst as alternate.

D. H. KASH, Secretary.

Carlisle:—The Carlisle County Medical Society met in Milburn at the home of H. A. Gilliam, September 4, 1923.

Members present: W. Z. Jackson, J. F. Dunn, R. T. Hocker, of Arlington; H. A. Gilliam, Milburn; R. C. Burrow, Cunningham; G. W. Payne, Wm. L. Mosby and T. J. Marshall, of Bardwell.

The President, Wm. L. Mosby called the society to order at 11 A. M. after prayer by Dr. Hocker, the minutes of the last meeting, which was in March, 1923, were read and approved. A letter from Dr. A. T. McCormack was read, regarding the election of a delegate and alternate to the State meeting. T. J. Marshall was elected delegate and W. Z. Jackson, alternate.

The regular program was then taken up, R. C. Burrow read a very interesting paper on pellagra, H. A. Gilliam a paper on Amenorrhea, and W. Z. Jackson on Bronchial Asthma. All the papers were practical and interesting and all present entered heartily into the discussion of all the papers.

At 12:30 P. M., the society repaired to the dining room of Dr. and Mrs. Gilliam where a sumptuous dinner was served.

The society adjourned at 3:00 P. M. to meet in Bardwell the first Tuesday in December.

This was a splendid meeting in every respect.

T. J. MARSHALL, Secretary.

Nelson: -The Nelson County Medical Society met Thursday, the 8th day of August, 1923, in the office of the president, S. A. Cox. The following doctors were present: J. J. Wakefield, S. B. Crume, Bloomfield; C. Z. and Guy And, of Louisville; W. E. Crume, G. W. Hill and R. H. Greenwell, of Bardstown. The following program was presented and fully discussed:

Councilors Address—C. Z. And, Louisville.

Subject to be announced at meeting—Dr. Chas. McChurg, Cox's Creek.

Report of cases—J. I. Greenwell, New Haven.

Surgery of Gall Bladder—Guy And, Louisville.

Report of cases—J. J. Wakefield, Bloomfield.

Chairman, J. J. Wakefield, appointed W. E. Crume, alternate, to accompany him to Crab Orchard for state meeting, and also the following members as committee to form resolutions, recommending A. T. McCormack as state secretary; S. B. Crume, W. E. Crume, and R. H. Greenwell, the following resolutions were adopted:

Being thoroughly acquainted with the history and accomplishments of the State Board of Health of Kentucky, the Nelson County Medical Society commends its methods of organization and approves its non-political and non-partisan character, and pledges its support to its work in lessening unnecessary disease and prolonging life among our people, and we protest against any change in the selection of its members. We do hereby instruct our delegates to recommend Dr. A. T. McCormick to continue as Secretary State Board of Health and State Medical Society.

W. E. CRUME, M. D.

R. H. GREENWELL, M. D.

No further business, Society adjourns.

R. H. GREENWELL, Secretary.

Third District Medical Society—The third meeting of the Third District Medical Society was held in the Auditorium of the Methodist Church, Scottsville, Ky., August 29, 1923, the meeting being called to order by Dr. Walter Byrne, Sr., with the following members present: G. R. Keen, M. M. Moss, Francis, Alderson, Burr, Calvert, T. O. Helm, Walter Byrne, Sr., Strother, Claypool, Lattie Graves, Cherry, Douglas, Carson, E. J. Keen, Miller, Ran, A. T. Botts, Lee Botts, Singleton, Stone, Meredith, Pellie Graves, Whitney, Neel, Guthrie, Holland, Donnelly, Hinton, Vickers, Blackburn, Gossett, J. Y. Freeman, LaFayette, Tenn.

The meeting was opened with prayer by Rev. H. H. Jones. Dr. Lee Botts, Glasgow, read a paper on "Diphtheria" which was discussed by Drs. E. J. Keen, Graves, Meredith, Alderson, Ran, Blackburn, A. T. Botts, Pellie Graves, Claypool, Cherry, G. R. Keen, Neel, Moss, Guthrie, Strother, Calvert and Helm.

Ernest Ran, Bowling Green, read a paper on "Acute Otitis Media in Children," which was discussed by Drs. Moss, Meredith, Lattie Graves, Blackburn, Cherry, and Ran.

A delightful dinner was served at the Jacksonian Hotel.

After some discussion as to the advisability of continuing the Third District Medical Society next year, it was unanimously carried that the meetings be continued during 1924, the officers to be elected at the first meeting of the year.

Starling Alderson read a paper on "Typhoid," which was discussed by Drs. A. T. Botts, Calvert, Claypool, E. J. Keen, Douglas, Singleton, G. R. Keen, Gossett, Blackburn, and in closing Dr. Alderson.

A rising vote of thanks was extended the Methodist Church and the profession of Allen County for the meeting place and the delightful manner in which we had been entertained. The society adjourned to meet in Russellville the latter part of October.

FORUM

To the Editor:—

My husband D. H. B. Myers, died on July 26, naturally leaving a fine practice, with practically no opposition from a surgical standpoint. I would like for some capable physician of good recommendation to come to Ewing to settle. It's a small town, lovely community, can come right into a fine practice. The opportunity is fine for some one looking for a splendid opening.

MRS. ANNA P. MYERS, Ewing, Ky.

Results of Gallbladder Surgery. In a series of ninety-one cases analyzed by Graham, there were seven deaths. In the chronic cholecystitis group without stone formation, there were fifty-two cases and one death, that one death occurring a year later as the result of a recurrence of a duodenal ulceration, for which a gastro-enterostomy had to be performed. The other six deaths occurred, with one exception, when the disease had progressed to the formation of stone, and in that instance there was an associated intestinal obstruction in a patient five months' pregnant, who miscarried seventy-two hours after operation. In view of the inefficiency of other forms of therapy in controlling sequels and relieving symptoms of gallbladder disease, Graham urges that surgical therapy should be instituted, preferably in the early stage of the disease prior to the onset of complications, at which time the mortality is practically negligible; and further that such surgical therapy, judiciously applied, will cure 66 per cent. and improve 34 per cent. of patients who survive the procedure.

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EDITORIAL

THE CRAB ORCHARD MEETING

The Seventy-third Annual Session of the Kentucky State Medical Association at Crab Orchard Springs will be a hallowed memory to the five hundred and thirty-seven Kentucky physicians who participated in it. The scientific sessions are exceptional, even in this Association, which has always had good scientific programs, both for the character of the essays and for the excellence of the discussions.

The Annual Orations were especially noteworthy. Those in Medicine and Surgery, delivered by our own Drs. Tyler and Howard, published in the last issue of the Journal, were exceptionally able messages and should be read and the message in them carried to our people everywhere.

The added address, delivered by Dr. Hugh Cabot, dean of the Medical Department of the Unviersity of Michigan, was so practical and sane that it left in the minds of his hearers the one regret that all of his recommendations could not be made effective in every medical school everywhere instantly.

The Annual Oration, delivered by Dr. J. B. Kennedy, of Detroit, merited the most enthusiastic reception that has ever been given to an annual oration by the members of the Association. Those in attendance felt that Dr. Kennedy had assembled the accomplishments of modern scientific medicine in such a way that they could be reproduced indefinitely, not only for our people in Kentucky but also for the people of the nation. The substance of his address should be put into the hands of every thinking citizen of Kentucky. It is the most complete answer to the feeling of distrust that is too frequently expressed by the thoughtless about the medical profession. Both open and insidious attacks are constantly being made upon us by those interested in exploiting the sick public. Dr. Kennedy furnished us with a vaccine, if properly applied to that public, will be our best defense.

The last session for the election of officers was a noteworthy occasion. All but seven counties in the State were represented. It was the largest attendance that has ever been recorded for a final session of the House of Delegates. Every nominee was elected unanimously. There were no contests. We know we speak the common feeling of those chosen for responsible offices of the Association when we say that this unanimity makes them feel a very much greater sense of responsibility for the service they give to the profession and people of the State than they could otherwise feel.

The selection of Dr. J. R. Cowan, of Danville, as president was peculiarly fitting. The Association met in the very neighborhood where the first settlements were made in Kentucky, within sight of the last conflict with the Indians, almost within hearing distance of the discussions that resulted in the adoption of the first constitution of the State, within a few miles of that shrine where the immortal McDowell performed the first ovariotomy and presided over the birth of surgery, and it was within keeping of the traditions of the medical profession of Kentucky that it should have chosen from this environment one of its most gifted sons as its leader during the next year.

The re-election of Dr. McClure for the fifth time as treasurer is of more than usual interest. Dr. McClure has served the Association with fidelity and zeal. In point of service, he is now the oldest officer of any State Medical Association in the United States. He has been during all these years much more than treasurer in the ordinary sense of that term. He has been a wise counselor, sincere and faithful official, and he has felt, and the profession has felt, that in a larger sense he has been one of the great guardians of that treasure which we value most highly in the medical profession—our own reputation and our responsibility to the public which we serve.

It is with diffidence and real difficulty that the editor of the Journal expresses his feeling upon his re-election as secretary for another term of five years. No one else knows so well

how frequently he has failed to do many of the things that should have been done for the welfare of the profession and the public, but, commissioned again by the profession of the State to serve it for another term, he will try as zealously as is in him to carry out the instructions and make practical the aspirations of those who have shown confidence in him. Deprived of the advice and counsel of the best father any man in public life ever had, he desires to ask the personal advice and support of the members of the profession of the State in the work which has been entrusted to him, and he realizes, as you must, that it will be successful just in proportion as you advise and support him wisely. The problems of public health and medicine have always been far too much for any one man in any state to solve. We have heretofore made better progress in Kentucky than in any other state, because we have had a united, cohesive democracy composed of practically every physician in the State. At Crab Orchard, everyone was impressed with the feeling that it was a family gathering, met together to help the public weal. That is why Kentucky is a Commonwealth and the secretary of the Association can be effective as long as he is able to express and activate the will of such a body as elected him.

CRAB ORCHARD SPRINGS

The physicians of Kentucky are particularly glad that they have become acquainted with the Crab Orchard Springs Hotel and its management. There is a quiet air of comfort about the place that is appealing. It is a restful resort. The meals are the best sort of home-cooking. Crowded beyond any possibility of ordinary comfort or regular care, it was evident that the room service makes this hotel a delightful place to spend a vacation or a period of convalescence or recuperation. We physicians in Kentucky have too much gotten the habit of sending our patients to distant resorts and it was both surprising and gratifying to know that we had within our State a place where both our patients and our families can get such rest and comfort.

The hotel has arranged to have a competent physician in constant attendance. They have put in a complete system of medicated baths with competent masseurs. They have organized the competent physicians of Crab Orchard as a consulting staff. Patients may be sent to the Springs with a letter to the physician who will carry out faithfully his instructions.

It is a real pleasure to commend Crab Orchard Springs to those physicians who were not present at the meeting, as a health resort which is a real one.

THE HUNDRED PER CENT DISTRICT

At the Crab Orchard meeting one of the notable reports was made by Dr. J. S. Lock, the Councilor of the Eleventh District, composed of eight counties. In this District there are one hundred and forty-six physicians and one hundred and forty-six members of the Kentucky State Medical Association.

This is the first district in the United States to report a hundred per cent membership and the Journal desires to extend its congratulations to the physicians of the district, to the secretaries of the county medical societies and to Dr. Lock, who has been indefatigable in his councilor work for the district. This record is respectfully commended to the councilors of the other districts of the State.

The delegates of the Eleventh District at the meeting showed their appreciation of Dr. Lock's services by presenting his name for the election of another term of five years as Councilor. No other physician in Kentucky has had a more notable public service than Dr. Lock. As Health Officer and Medical Referee of Knox County; as a Field Representative of the State Board of Health and the Rockefeller Commission for the eradication of hookworm disease; as all-time Health Officer of the Mason County Board of Health; Field Representative of the U. S. Public Health Service; as President of the State Medical Association; as Executive Secretary of the State Tuberculosis Association, and as Director of the Bureau of Tuberculosis for the State Board of Health he has had a wide experience, and in each capacity has made good.

It is a delight for the profession of Kentucky to honor Dr. Lock.



Dr. J. S. Lock, Barbourville
Councilor of Eleventh District.

THE WOOLFOLK BARROW MEMORIAL.

Surgical Charity Service is a most fitting memorial to the useful life of his son, the late Dr. Woolfolk Barrow. Dr. David Barrow has arranged with the Sister Superior of St. Joseph's Hospital at Lexington to establish a surgical charity service. The income from $30,000 will be given to the hospital, and that amount will be expended in caring for the patients admitted to this service at actual cost to the hospital. The doctors of the Lexington Clinic will furnish all professional services without charge and the hospital will care for these patients without cost to the patients. The hospital will receive patients recommended, beginning November 1, 1923.

Charity surgical patients from Central and Eastern Kentucky are eligible, but residents of Fayette County are not included, as the City of Lexington and Fayette County have arranged with the two hospitals in Lexington to care for such cases. Applicants for this service must report to the Lexington Clinic for examination with letters from the patients' physicians stating that they are strictly charity cases, and, if, after the examination, surgical treatment is indicated, they will be sent to St. Joseph's Hospital.

In justice to the profession itself, and to the hospital, and to the memory of the conscientious service and high character of the late Dr. Barrow, it is essential that these cases be very carefully and conscientiously selected by the profession of the Eastern part of the State.

Such a memorial to such a son by such a father is one of the most notable things in the medical history of Kentucky.

WASHINGTON MEETING OF THE SOUTHERN MEDICAL ASSOCIATION

The Southern Medical Association will hold its seventeenth annual meeting at Washington, D. C., Monday, Tuesday, Wednesday and Thursday, November 12-15, 1923. Dr. W. S. Leathers, Executive Officer, Mississippi State Board of Health, Jackson, Mississippi, is President.

This meeting will be made up of twenty sections and conjoint meetings—the programs of these meetings will cover every phase of scientific medicine and surgery.

The President of the United States will receive informally the members of the Southern Medical Association and their wives, Thursday, November 15th, at 12:30 p. m. at the White House. Of special interest to the ladies will be the reception at the Washington Club on Tuesday afternoon where Mrs. Woodrow Wilson will be the guest of honor. The usual reception to the President of the Southern Medical Association will be held on Tuesday night at the New National Museum, one of the most beautiful public buildings of Washington, a detachment of the Marine Band furnishing the music. Other special entertainments being received.

At the first general session on Monday night, in addition to the address of the President, Dr. Leathers, there will be an address by Dr. Geo. E. Vincent, President of the Rockefeller Foundation, New York, N. Y.; Oration on Public Health by Dr. W. S. Rankin, State Health Officer of North Carolina; Oration on Medicine by Dr. Stewart R. Roberts, Atlanta, Georgia; and Oration on Surgery by Dr. J. W. Barksdale, Jackson, Miss.

A joint dinner by the Section on Surgery and the Section on Radiology, as well as a number of section dinners, will be interesting features of Tuesday evening. The Alumni Reunions which promise to be an outstanding feature of this meeting will be held on Wednesday night and it is expected that there will be large groups present from all of the leading medical schools.

Physicians who golf are urged to bring their clubs. There will be a golf tournament at which the usual prizes will be offered. Play will be over the championship course of the Columbia Country Club.

The University of Virginia Hospital, Charlottesville, have already announced special clinics for Friday and Saturday following the meeting. While no definite announcement has been made yet, it is anticipated that Johns Hopkins and the University of Maryland will arrange clinic programs for Friday and Saturday following the Washington sessions.

Washington has many splendid hotels and every one is assured of comfortable accommodations this year. Special reduced rates have been granted by railroads on the certificate plan. Each member of the Southern Medical Association will receive a certificate without application for it. Any physician who is a member of his state and county medical society although not a member of the Southern Medical Association, who desires to attend this meeting, can have the benefit of these reduced rates by requesting a certificate from the Association office.

DIPHTHERIA

This Journal will reach its readers at the time when, reasoning from our experience for the past fourteen years, we will have the highest number of cases of diphtheria. It is of importance that we secure through all avenues of publicity the education of the people to the importance of having a competent

physician see their children as soon as they have attacks of sore throat, especially if there are any white patches in the throat. In all suspicious cases antitoxin should be administered in a dosage of at least 10,000 units immediately. Culture should be taken at the first visit and sent to one of the state laboratories. No case should be released from quarantine until at least two negative cultures have been sent to the laboratory. A depot for the sale of antitoxin at reasonable prices has been arranged in each county by the State Board of Health. Keep in touch with the bureau in your County and be sure they have an ample supply of antitoxin on hand at all times. Use it promptly and in sufficient doses and we should materially reduce the death rate from this disease.

Why should we continue to have a high death rate from diphtheria in Kentucky? In many of our country districts most of the school children are not immune to this disease. If each physician will administer the toxin-antitoxin to his own children and then advise it for his own patients, it should be a matter of only a few years until the disease practically disappears from Kentucky.

Let's do more effective work with a view to ridding our State of the reproach of having the highest death rate from this most preventable of all preventable diseases.

OBSTETRICAL COLUMN

By Alice N. Pickett

Director Prenatal Clinic, Louisville City Hospital.

Two cases of eclampsia were admitted this month, neither of whom had had any prenatal care.

We were all much distressed over the death of one of these mothers. Our staff is agreed that nearly all eclampsia is preventable, and that prenatal care lessens the severity of those rare cases which occur in spite of such oversight.

Personally, I believe that this is an absolutely preventable disease, provided the pregnant woman has intelligent and systematic routine care during the entire prenatal period. The routine should include a bi-weekly examination for the first seven months and a weekly examination for the last two months. At each examination a blood pressure record and a urinalysis should be made and a careful history taken as to headaches, eye symptoms, oedema, constipation, scanty urine and epigastric distress.

On the appearance of a rising blood pressure or any of the other signs of toxaemia, she should be told not to eat any of the heavier protein foods, eggs, meat, cheese, dried beans, and she should take a dose of epsom salts every morning—all nerve strain should be avoided and her rest hours should be increased. This routine should be maintained until she is absolutely normal.

It is interesting to note that both our cases this month gave an absolutely negative urinalysis and both had high blood pressure. Thus again our attention is called to the importance of watching the blood pressure in pregnancy. A rising scale is usually the first warning of impending danger. A negative urine is not significant but the patient whose urine shows albumin and casts is well on her way to her "rendezvous with death."

Syphilis

In our 36 cases this month, we had four (4) mothers who gave a positive Wasserman,—one a doubtful and three (3) had no blood tests made.

Case No. 4. Wasserman 2 plus. Prenatal treatment 6 Sal., 4 Mercury. Baby living, 3 ounces above birth-weight on dismissal.

Case No. 19. Wasserman 3 plus. No treatment—baby living but losing weight steadily at 5 weeks of age. Later showed marked improvement.

Case No. 20. Wasserman 4 plus. No treatment. Baby dead.

Case No. 25. Wasserman 2 plus. No treatment. Baby living 10½ ounces below birth-weight on dismissal.

Four Fetal Deaths

Case No. 2. Hospital Number 51223. Para 1. Dr. Buttorff, Interne: Dr. Pickett, staff.

This patient came to the hospital as a waiting patient and was kept under the observation of the clinic. Her spine showed marked Kyphosis, (See photograph). The most prominent part of the "knuckle" being at the level of the spine of the last lumbar vertebra. For this reason the extreme length of the external conjugate was not significant. The distance between the spines was 24, between the crests 26. The promontory could not be felt per vagina because of the backward displacement of the last lumbar vertebra. On her first day in clinic, the fetal head was floating above the symphysis and the fetal heart tones were good. We thought since the inlet was good and the outlet fair, she might go on to spontaneous delivery, provided the inclination of the pelvis on the spine was not such as to prohibit the descent of the child into the pelvis.

Next day the x-ray plates showed the baby in transverse position, and fearing we might have to resort to Caesarian Section, we ordered no further vaginal examinations to be made.

Obs. Service, Louisville City Hospital, 7-24-23 8-16-23. Dr. G. S. Buttorff, Int. Dr. F. E. Williams, Ext.

Hospital Deliveries

No.	Reg. No.	Para	P. C. Care	B. P. R.	Toxemia	Wass.	Prenatal Syph. Tr.	Ch. of Pelvis	Ch. of Del.	Pos.	Wt. Baby	At Term	Fate of Baby	Cond. Mother on Discharge	Cond. Baby on Discharge
1	51223	1	Clinic	112-140	Slight	Neg.		Inlet Good—Outlet Cont.	Spontaneous	R. O. A.	5.14	Yes	Living	Good	Good
2	50643	1	Clinic	Normal		Neg.		Kyphosis	Forceps	R. O. P.	6.0	Yes	Dead	Good	Dead
3	51720	2	Clinic	Low		Neg.		Cent. Contracted	Forceps	L. O. A.	6.14	Yes	Living	Good	Good
4	51722	1	Clinic	110-140	Slight	2 Plus	6-6004 M.	Inlet Normal—Outlet Cont.	Forceps	L. O. A.	7.13	Yes	Living	Good	Good
5	51767	1	Clinic	118-140	Slight	Neg.		Normal	Spontaneous	L. O. A.	7.8	Yes	Living	Good	Good
6	51781	1	Clinic	Normal		Neg.		Normal	Spontaneous	L. O. A.	7.1	Yes	Living	Good	Good
7	51811	1	Clinic	Normal		Neg.		Slight Flattening	Spontaneous	R. O. P.	8.2	Yes	Living	Good	Good
8	51869	1	Clinic	Normal		Neg.		Normal	Spontaneous	L. O. A.	6.10	Yes	Living	Left 8th Day	Left 8th Day
9	51902	1	No					Normal	Spontaneous	L. O. A.	7.6	Yes	Living	Good	Good
10	51901	1	No		Eclampsia	?		?	Spontaneous	L. O. A.	5½	?	Dead	Dead	Dead
11	51898	1	Clinic	Normal		Neg.		Normal	Forceps	L. O. A.	8.2	Yes	Living	Good	Good
12	51910	1	No			Neg.			Spontaneous	L. O. A.	7.3	Yes	Dead	Good	Dead
13	51922	4	Clinic	140	Slight	Neg.		Normal	Spontaneous	?	7.4	Yes	Living	Good	Good
14	51923	2	No			Neg.		Normal	Spontaneous	L. O. A.	6.2	Yes	Living	Good	Good
15	51949	1	No			Neg.		Normal	Spontaneous	L. O. A.	7.7	Yes	Living	Good	Good
16	51928	2	Clinic	Normal		Neg.		Normal	Spontaneous	L. O. P.	7.14	Yes	Living	Good	Good
17	51951	1	No		Eclampsia	Neg.		?	Spontaneous	?	7.8	Yes	Living	Good	Left 12th Day
18	51952	1	No			Neg.		Normal—Small Child	Spontaneous	L. O. A.	4.15	Yes	Living	Left 12th Day	Left 2nd Day
19	51938	1	No			3 Plus	None	Somewhat Flat	Caesarean	L. O. A.	6.3	Yes	Living	Fair—3 Plus	Fair
20	52000	2	No			4 Plus	None	Normal	Spontaneous	L. O. A.	6.8	8 Mo.	Dead	Good—4 Plus	Dead
21	52049	4	Clinic	Normal		Neg.		Normal	Spontaneous	R. O. A.	6.12	Yes	Living	Good	Good
22	52051	4	No			?	None	?	Spontaneous	R. O. A.	6.5	Yes	Living	Good	Good
23	52055	1	Clinic	Low		Neg.		Normal—Small Child	Spontaneous	L. O. A.	6.12	Yes	Living	Good	Good
24	52061	1	No			Neg.		?	Spontaneous	R. O. P.	4.2	8 Mo.	Living	Good	Good
25	52078	1	Clinic	Normal		2 Plus	None	Inlet Fair—Outlet Small	Spontaneous	R. O. A.	6.15	Yes	Living	Good	Good
26	52084	2	Clinic	Low		Neg.		Normal—Small Child	Spontaneous	L. O. P.	6.7	Yes	Living	Good	Good
27	52091	1	Clinic	Normal		Neg.		Cont. Mild Degree	Spontaneous	L. O. A.	7.1	Yes	Living	Good	Good
28	52079	1	Clinic	Low		Neg.		Inlet Good—Outlet Cont.	Forceps	L. O. A.	6.4	Yes	Living	Good	Good
Home Deliveries.															
29		4	No						Spontaneous	R. O. A.	6 ?	Yes	Living	Good	Good
30		3	No						Spontaneous	L. O. A.	?	Yes	Living	Good	Good
31		1	Clinic	Normal		Neg.		Normal	Spontaneous	L. O. A.	?	Yes	Living	Good	Good
32		2	Clinic	Normal		?			Spontaneous	R. O. A.	8 ?	Yes	Living	Good	Good
33		8	Clinic	122-165	Slight	Neg.		Normal	Spontaneous	L. O. A.	8 ?	Yes	Living	Good	Good
34		1	Clinic	122-138	Slight	Neg.		Normal—Small Child	Spontaneous	L. O. A.	5 ?	8 Mo.	Living	Good	Good
										Breech	5 ?		Living		
35		4	Clinic	134	Slight	Neg.		Normal	Spontaneous	R. O. A.	7 ?	Yes	Living	Good	Good
36		3	Clinic	Normal		Neg.		Normal	Spontaneous	L. O. A.	9 ?	Yes	Living	Good	Good

No. of Clinic Cases, 23. No. of Fetal Deaths, 4. No. of Puerperal Infections, 1. No. of Post Partum Hemorrhage. No. of Eclampsia, 2. No. Toxemia, Slight, 7.
No. of Non-Clinic Cases, 13. No. of Maternal Deaths, 1. No. of Maternal Syphilis, 4. No. Retroversion on Discharge, 4. No. of H. B. R. Cases, 7.



Case No. 2. Hospital No. 51223.

Later on the fundus dropped and the head fitted snugly into the pelvis. The fetal heart was closely watched. It remained full and regular until the morning of the 2nd day before delivery, when we could not hear it. The patient at that time complained of having had a few slight pains the night before. During the day we listened several times for the fetal heart, but were never able to hear it again. Convinced of the death of the baby we ruled Caesarian Section out of the question.

On the afternoon of the next day, she went into labor. Dilatation was completed spontaneously after which the membranes were ruptured artificially. When the head had descended almost to the perineum, low forceps were applied because of slow progress. During the application a *prolapsed* loop of nonpulsating cord was discovered in the vagina, having slipped down just behind the symphysis pubis. The baby had been dead several hours. We believe the cord came down into the pelvis along side of the head as it began to settle into the brim. No harm was done the child until the first feeble uterine contractions brought about the asphyxia of the baby by pressure upon the cord. An unusual feature of the case was the occurance of fetal death from cord pressure *before* the rupture of the membranes.

This case teaches us the danger of cord-prolapse in asymmetric pelves. We know now, this baby could have been saved by Caesarian Section, done before the onset of labor. At that time, however, the head was fixed, the heart good, and all signs pointed to a happy termination of labor. Had we resorted to Section at this time, we would always have condemned our handling of the case as *unnecessarily* radical.

Case No. 10. Hospital No. 51901. (See eclampsia).

Case No. 12. Hospital No. 51910. Para 1. Dr. Buttorff, Interne; Dr. Kiefer, Staff.

This patient prior to admission to the hospital had been in labor 36 hours during which time several attempts had been made to deliver her with forceps. The patient was quite exhausted. The pains were slight and fleeting. A caput was bulging at the vagina orifice. On examination the head was found to be macerated. Forceps were considered inapplicable after endeavoring in vain to dislodge the head enough to insert the blades.

After much difficulty the fetus was extracted manually. It had been dead several days. The mother's Wasserman was 2 plus. Her temperature ranged from 99 to 101 from the 3rd to the 9th days. The leucocytes rose to 16,200. The infection, along with a subsequent partial incontinence of urine and stiffness of the legs, was due to the manipulations necessary at delivery. The patient was discharged in fair condition.

Case No. 20. Hospital No. 5200. Para 2. Dr. Buttorff, Interne; Dr. Kiefer, staff.

This patient had no prenatal care. She was delivered spontaneously of a still-born child at 8 months. Her Wasserman was later found to be 4 plus. Cause of death, congenital syphilis.

5 Forceps Deliveries

Case No. 2. See Fetal Death from prolapsed cord.

Case No. 3. Hospital No. 51720. Para 2. Dr. Buttorff, Interne; Dr. Pickett, staff.

This was a clinic patient. Her pelvis was recorded as "generally contracted." Prognosis, "Probably Caesarian." Her measurements were: Between spines, 18; between crests, 26; external conjugate, 18; diagonal conjugate, from 10½ to 11. The head descended to mid pelvis. After 2 hours and 25 minutes of 2nd stage pains, all progress stopped in spite of hard contractions. Forceps

were applied and a living baby, weighing 6 pounds and 14 ounces was delivered. Mother and baby were discharged in good condition.

Case No. 4. Hospital No. 51722. Para. 1. Dr. Buttorff, Interne; Dr. Pickett, staff. A clinic patient. Wasserman 2 plus. Prenatal anti-syphilitic treatment good. The pelvis was described, "Inlet good, outlet somewhat contracted." After 19½ hours of labor, low forceps were applied because of cephalo-pelvic disproportion. A living baby was delivered. Weight 7 pounds, 13 ounces. Mother and child discharged in good condition. The child showed no evidence of syphilis.

Case No. 11. Hospital No. 51898. Para 1. Dr. Buttorff, Interne; Dr. Keifer, staff.

The pelvis was described in clinic as "normal." The baby was, however, unusually large, the birth weight being 8 pounds, 2 ounces. Dilatation was completed after 55 hours of labor. When the 2nd stage had been in progress for 3 hours and 55 minutes, fears for the safety of the baby prompted the application of forceps.

The mother and child were discharged in good condition.

Case No. 28. Hospital No. 52079. Para 1. Dr. Butorff, Interne; Dr. Rubel, staff.

This patient came in from the prenatal clinic where her pelvis was described as "inlet good; outlet somewhat contracted." At delivery the head stuck at the outlet and low forceps were applied. A living baby weighing 6 pounds and 4 ounces was delivered.

Mother and child discharged in good condition.

Twins

This case was cared for in clinic. She made five visits and much to our chagrin we did not recognize it as one of multiple pregnancy. The diagnosis was several times that of "breech", and no x-ray was thought necessary. One baby was born by precipitate delivery before the arrival of the externe; the second, delivered spontaneously soon after, in breech position.

Mother and babies discharged in good condition.

One Caesarian Section

Case No. 19. Hospital No. 51938. Para 1. Dr. Buttorff, Interne; Drs. Speidel and Kiefer, staff.

No prenatal care. Postnatal Wasserman test gave 3 plus reaction. Her initial examination on admission showed the fetal head fixed, the position L. O. A., the fetal heart normal. The measurements were; between the spines 21½; between the crests 20; external conjugate 18, diagonal conjugate 11. Breadth of arch poor. The distance between the spines too small. Fearing the case might come to Caesarian because of the generally contracted pelvis no further vaginal examinations were made.

Eight hours after admission at 10 P. M., labor was ushered in by the rupture of the bag of waters followed by feeble contractions during the night. The contractions became forceful in the morning and continued throughout the day. In the evening a rectal examination revealed no progress and a night's respite was induced by ¼ grain of morphine. The contractions were regular and forceful next day but during the afternoon a rectal and abdominal examination showed no progress and a section was done by the high Davis incision method.

A baby weighing six (6) pounds, 2¾ ounces was delivered. It showed slight asphyxia and the resuscitation offered no difficulty. There was marked head molding present.

A stormy convalescence followed. Hiccough was prolonged and troublesome. Her temperature rose to 103. Pulse 150. Nausea with the vomiting of dark brown material was only temporarily relieved by gastric lavage. To this was added colicky abdominal pain and abdominal tenderness so that an ileus was feared. The abdominal symptoms subsided however rather suddenly. Later on a superficial infection of the abdominal wall prolonged the convalescence.

The wound healed nicely and she left the hospital in good condition.

At the end of the 5th week the condition of the baby was grave. Since that time it has shown marked improvement.

Two Eclampsias

First case of Eclampsia—Antepartum. (Maternal death).

Case No. 10. Hospital No. 51901. Para 1. Dr. Buttorff, Interne; Dr. Kiefer, staff.

No prenatal care. Admitted in convulsion. Pulse 180. Blood pressure 152-90. Temperature 102.6. Resp. 36. A rectal examination showed the head engaged but high on the pelvis. The cervix was obliterated. The dilatation could not be made out. It was either complete or nihil. No fetal heart could be heard. Morphine gr. ¼ was given at once and the convulsions farther controlled by chloroform. A gastric lavage of 5% soda solution was followed by the installation through the tube of 4 ounces of castor oil containing 2 minims of croton oil and 40 grams of sodium bromide. The blood pressure dropped to 116-24 and the patient regained consciousness sufficiently to drink 18 ounces of water. Within the next 3½ hours however, she had several hard convulsions and the blood pressure rose to 198-120. During this time uterine contractions came on and 7 hours after admission a macerated baby was delivered spontaneously. The cord was prolapsed.

The mother's pulse was very rapid and feeble after delivery and the pressure dropped 142-104. One hour after delivery a convulsion came on which lasted an hour. Some improvement followed free elimination by skin, bowel and kidneys and the administration of heart stimulants but she did not regain consciousness and death occurred 43 hours after admission.

Second case of Eclampsia—Postpartum. (Recovery).

Case No. 17. Hospital No. 51951. Para 1. Dr. Buttorff, Interne; Dr. Kiefer, staff.

This patient had no prenatal care. She had been delivered 8 hours before admission by a private physician who reported a normal delivery followed by 6 postpartum convulsions. She had had morphine gr. ¼ given twice before her admission. Her blood pressure was 180-90. Her urinalysis was negative. Soon after admission she had her first and only convulsion. Her treatment consisted of 5% Sod. Gastric Lavage followed by 6 ounces of saturated magnesium sulphate solution with 40 grains of sodium bromide through the tube. 275 c.c. of blood were withdrawn 3½ hours after admission. She voided freely and her blood pressure dropped to 132-80. She soon regained consciousness and was able to take water by mouth.

Bowel elimination was secured by 1 gallon colonic irrigations of soda solution morning and night.

She was put on anti-eclampsia diet. Four days after delivery her blood pressure was 126-90. On the 12th day after admission, she left the hospital in fair condition.

The baby gained 13 ounces above the birthweight while in the hospital.

Study of Faisceau de Turck. A tumor measuring 5 cm. anteroposteriorly and 4 cm. transversely was found by Rhein occupying the posterior two thirds of the first and second temporal convolutions. Microscopic examination disclosed that the cortex and white matter of the superior and middle temporal gyri were totally destroyed by the tumor, and the brain tissue anterior and posterior to these regions to the extent of about 2.5 cm. was implicated by a cellular infiltration consisting of cells similar to those found in the tumor proper. A study of the serial sections of the brain internal to the tumor and the corresponding levels on the opposite side failed to reveal any evidence of degeneration on either side. The faisceau de Turck, at the point where it appears in the retrolenticular region, was intact. The foot of the peduncle stained uniformly and showed an undegenerated faisceau de Turck in this region.

OFFICIAL ANNOUNCEMENTS

OFFICIAL MINUTES OF THE SEVENTY-THIRD ANNUAL MEETING OF THE KENTUCKY STATE MEDICAL ASSOCIATION HELD AT CRAB ORCHARD, SEPTEMBER 17, 18, 19, 20, 1923.

Tuesday, September 18—First General Session

The First General Session was called to order at nine o'clock by the president, Louis Frank, of Louisville.

THE PRESIDENT: The time has come for the scientific session of the Seventy-third Annual Meeting of the Kentucky State Medical Society to begin. The first on the program is the invocation by Dr. J. G. Carpenter, of Stanford.

J. G. CARPENTER: Our Father who art in heaven, we praise and thank Thee for Thy goodness and Thy love and Thy mercy to the doctors throughout the land and to the people. Lord be merciful unto us today. Guide us and direct us in our thoughts, our words and our acts. May everything be said and done to the glory of God.

Lord, we thank Thee that we have a state medical association and a state board of health for the good that has been done throughout the land, for these institutions have been shining lights and a blessing to the human family throughout the world. Lord, we thank Thee that we had an illustrious light, Dr. Joseph Nathaniel McCormack, who by his unselfish work and life blessed the world.

Lord, remove all envy and hate and selfishness and jealousy and duplicity and hypocrisy from our lives; make us better and happier and wiser men. Lord may we all be in the ark of safety spiritually, not only save ourselves for eternity but save the sinners and backsliders to the glory of God that Jesus might be blessed.

Lord watch over us today, make us thankful for the blessings of life, bless the retiring President and the incoming President; may they honor and glorify this society as has never been done before. All of which we ask in Jesus' name. Amen.

THE PRESIDENT: Dr. M. M. Phillips, of Crab Orchard, will now extend to you the welcome.

M. M. PHILLIPS: Mr. President, Members of the Kentucky State Medical Association: To me has been given the honor and pleasure of welcoming you to Crab Orchard for our Seventy-third meeting of the Ken-

tucky State Medical Association, and in behalf of the managers of the Crab Orchard Springs, the town of Crab Orchard and the Lincoln County Medical Society, I extend to you a most hearty welcome.

We welcome you not as friends old or new, but as members of a tried and true profession. You have gathered here from all parts of our state representing a most noble profession. Here we will renew old friendships and form new ties. It makes our hearts grow tender towards stranger and friend alike as we come together thus in counsel, conscious of the tie that binds, and we trust that tie will continue to ever grow stronger until we shall all be united into one great family where charity, truth and loving kindness will ever abide.

May all our discussions be wise, moderate and just and for the general good of the profession that is so dear to the heart of every one here, and may each hour thus spent be of mutual benefit that we may all go forth to our respective homes prepared to do better work. Our profession is one of the grandest on earth, and with its broad field of usefulness it is second only to the Church of God in character building and charitable deeds.

The achievements of medicine and surgery have been wonderful in the past. Let us strive to make them even more so in the future. There is so much to be done that there is no time to be lost. We must not only tell of the great work of the past, but legislate for the future. While doing this let us not forget the words of our Savior who said, "Inasmuch as ye have done it unto the least one of these, my brethren, ye have done it unto me."

Do you remember the story of the other wise man, how on the long journey he found need to sacrifice his cherished purpose to answer the calls of suffering humanity until when he reached our Lord he was empty handed? The wonderful diamond, the sparkling ruby and the lustrous pearl were gone. So let it be with us. Let us sacrifice, if necessary, the diamond of intellectual culture, the ruby of worldly goods and the pearl of time to the calls of our profession, for what will God say to us if we stand before him rich in worldly goods if we have closed our eyes to suffering humanity?

We know that this meeting of the Kentucky State Medical Association is for the purpose of a future that thrills us with wonderful possibilities, therefore let us pledge our loyalty to duty, to God and to our work for the purity and betterment of our profession.

In this old historic town, noted for hospitality, where Emerson's words, "Happy is the house that shelters a friend" are made known in actions, we are glad you decided to come here and before this meeting is over may you too be proud you are with us.

May this meeting of the Kentucky State Medical Association be most successful, conquering every foe, overcoming every obstacle and safely reaching the goal for which we are striving.

May you, when in the future you turn back the pages of memory, recall with sweetest thoughts your visit to Crab Orchard Springs. We are glad you came, glad you are here. We hope you can stay a long time and when the time comes for your departure you may know that you take with you our good wishes, knowing that our hearts beat responsive to the same inspiration that prompts us to noble deeds.

Again in behalf of the Crab Orchard Springs, the town of Crab Orchard and the Lincoln County Medical Society, I welcome you. (Applause).

THE PRESIDENT: C. C. Howard, of Glasgow, will respond to this address.

C. C. HOWARD: Dr. Phillips, it is with a very deep feeling from this body of men from all over this state that I say to you we appreciate this hearty welcome which is touched with the milk of human kindness, which is one of the rarest attributes a life can hope to attain.

Let us think of all the homes and different assemblies we have attended. There are some that stand out in our memory like a bed of roses; there are others that cling to us like the icicles that hung to the eaves of the old back porch. Let us each sow a seed of kindly welcome in the memory of each one we meet, so in after years when he is home and his day's work is over and he is sitting by his own fireside smoking the old cob pipe in content, it will be a pleasure to pluck these roses sown by the boys at Crab Orchard in the year 1923. (Applause).

THE PRESIDENT: The next order of business, I believe, is for me to sing my "swan song" and to bring forward the new president and turn the office over to him.

It has been the pride of my life to have been the president of this Society and to have presided over its destinies for the past year. One feels a thrill in occupying a position the highest within the gift of the profession of his State, and, particularly is that true, when he is a follower in that position of such men as Gross, Flint, Lunsford P. Yandell, Skillman and others who have sat in this chair.

This Society was organized, as you doubtless know, in 1851 at Frankfort and, with the exception of a few years—one or two just preceding the Civil War and a year or two after the Civil War, it has met continuously both before and afterwards. It has a very strong

and notable history and in its records you will find much to be proud of. Some of the most eminent men in medicine that the world has known have been members of this Society, have read papers before it and have taken part in its discussions. I have found much of interest in the facts gathered together by the beloved late Dr. J. N. McCormack and published in his book which I know all of you who have not read would peruse with much interest, and I would advise you and suggest to you that you look at it from time to time. I think it is well for every man to know something of the history of his profession and particularly the profession of the State in which he lives. You will find much to be proud of in the volume mentioned. Patriotism and loyalty are builded upon our traditions.

In stepping from the President's chair to again join the fighting privates and handing your leadership over to Doctor Boyd, I felt that I wanted to do something to signify the pleasure which I have had and significant of the high honor you had bestowed upon me. I found that there was need for an official gavel, which this Society has never possessed. I do not know whether this little metal gavel we have been using is indicative of the hardheadedness of the men or a weakness of the chair; anyway I thought I might procure a gavel that might have some historic interest and possibly serve as a talisman for the Society.

I am opposed to vandalism in any form. I am sure all of us are opposed to such things, yet through the efforts of a vandal some time since, before I became president of this Association, there was wood removed from the home of Dr. Ephriam McDowell, the first man who ever performed an ovariotomy and the one who is the real father of abdominal surgery as it is today. I found out where some of this wood was and was fortunate enough with the kindly aid of Doctor Cowan of Danville to come into possession of it. I also, through the gratitude of a patient, who was related by ties of blood to Dr. Walter Brashear, who did the first hip amputation that was ever done, and not very far from here, came into possession of a silver spoon with which he had been fed and the thought occurred to me that with this wood and with this spoon I had the material at hand to have a gavel made for this Society.

And now, Doctor Boyd, it gives me very great pleasure, indeed, and particularly on account of my very warm friendship for you, to give you this gavel, which you will be the first to wield. I hope it will ever be to those who follow you a token not only of my love for the Society but with the great pioneer, McDowell, what the president of this Society should be, and further with this gavel before him, every member of this Society may by the inspiration he receives thinking of McDowell, strive as did he in the wilderness to open new fields for the relief of suffering mankind. With this in your hands, Sir, I shall now turn the further proceedings and the many interests of this Society for the coming year over to you. (Applause).

Dr. Boyd then delivered his address.

M. S. COMBS: If I am not out of order, I want to move you that we accept the gavel that Dr. Frank so generously offered us and extend to him a rising vote of thanks.

THE PRESIDENT: The Chair had expected to take that action a little later, but I will be glad to do so now. The speaker rather took me by surprise in presenting this now, because I intended to call the house in special order at twelve o'clock before the oration and make some remarks, but I will just take occasion to do so now.

In accepting this gavel for the Kentucky State Medical Society I do so with a feeling of profound respect for its donor and for his thoughtfulness in presenting it to the Society. I am sure that I voice the sentiment of every member of this Society in extending our thanks and appreciation to Dr. Frank for this historic relic.

The McDowell home is still standing, but I am afraid it will soon be a thing of the past. It is very regrettable that we can take no action to restore this place and retain it as a historical museum.

Dr. Frank, I thank you very sincerely and express appreciation of the Society. I ask for a rising vote of thanks from the Society for Dr. Frank's presentation. (Applause).

R. H. Cowley, Berea, read a paper on "Focal Infection from the Viewpoint of the Internist."

R. W. Bledsoe, Covington, read a paper on "Foci of Infection above the Collar Bone and Importance of their Early Recognition."

These papers were discussed together by J. G. Carpenter, G. C. Hall, S. S. Watkins, T. L. Higginbottom, Wichita, Kansas, W. E. Gardner, and in closing by the authors of the papers.

E. F. Horine, Louisville, read a paper on "Cardiac Disease in Childhood," which was discussed by J. W. Kincaid, J. H. Pritchett, Annie Veech, Stuart Graves and G. A. Hendon after which the discussion was closed by after which the discussion was closed by the the essayist.

LOUIS FRANK: As you gentlemen are doubtless aware, the officers of your Society have been very busy within the past year attempting to divert some of the dangers

which seemed to threaten organized medicine and our medical laws in this state.

There seems to have been an unholy alliance formed by some members of our own profession with those whom we believe should not profit by the credulity of the people of our state.

In an attempt to overcome such conditions, the officers of your Society have endeavored to ascertain the standing of the various candidates for political preferment in the state. In doing so we have been able to obtain the assurance of those who were up for selection for the highest office within the gift of the citizens of this commonwealth, and their expressed opinion and their statement that nothing would be done to disturb the medical laws in case either of them should obtain the nomination or in event of their election.

You are also aware of the unfortunate death of one of the candidates and of the necessity of one of the political parties selecting some one else as their standard bearer. Mr. Fields, who received this nomination, had been a patient of mine and I called upon him in the capacity not only of a friend and of a doctor and of his doctor, but also as an officer of your Society to obtain his expression and his sentiment with regard to our profession and the medical law. He had left the city, and I sent him a telegram asking him what his stand was. I had previously obtained the assurance of Mr. Dawson, the candidate of the Republican Party, that nothing would be done to disturb the present medical law or the status of our profession as it relates to certain management or to the management of certain phases of penal institutions in this state.

This morning I have received a telegram from Mr. Fields which I am sure you gentlemen will be delighted to hear, and which I would like to read to you. It is from Olive Hill and dated yesterday:

"I am unalterably opposed to the injection of politics into our penal, charitable and educational institutions and into our public health service. If elected governor I will see that they are kept aloof from politics.

"(Signed) W. J. FIELDS." (Applause)

Owsley Grant, Louisville, read a paper on "Surgery of the Prostate," which was illustrated with lantern slides, and which was discussed by Drs. Hugh Cabot, Ann Arbor, Michigan, Louis Frank and, in closing, by the essayist.

E. M. Howard, Harlan, delivered the oration in surgery. He selected for his subject, "Surgery—Why, When and How."

On motion the Association adjourned until 2 P. M.

First Day—Afternoon Session

The Association reconvened at 2 P. M. and was called to order by the President.

J. G. Gaither, Hopkinsville, read a paper on "Management of the Ruptured Appendix," which was discussed by Irvin Abell, E. L. Henderson, Guy Grigsby, John R. Price and Horace Rivers, and in closing the essayist.

O. R. Miller, Louisville, read a paper on "Chronic Infective Arthritis," which was discussed by Barnett Owen, J. R. Morrison, J. G. Carpenter, and in closing the essayist.

E. A. Stevens, Mayfield, read a paper on "Management of Placenta Praevia," which was discussed by E. J. Brown, J. G. Sherrill, and in closing the essayist.

J. T. Reddick, Paducah, read a paper on "The Treatment of Puerperal Infection," which was discussed by R. C. McChord, J. G. Carpenter, J. L. Toll, and in closing by the essayist.

Virgil Simpson, Louisville, read a paper on "Insulin in Diabetes." This paper was discussed by R. H. Davis, Frederick Speidel, Ernest Bradley and L. H. South, and in closing the essayist.

A. H. Barkley, Lexington, read a paper on "Present Status of Gall Bladder Surgery." This paper was discussed by Louis Frank, J. G. Gaither, P. H. Stewart, Guy Aud, E. P. Guerrant, and in closing by the essayist.

On motion, the Association adjourned until 8 P. M.

First Day—Evening Session

The Association reconvened at 8 P. M. and was called to order by the President.

THE PRESIDENT: Ladies and Members of the Kentucky State Medical Society: I feel it is unnecessary to introduce the speaker of the evening to the medical profession present, but for the benefit of the ladies who are not so well acquainted with medical men, I want to say that our speaker was formerly from Boston and at the present time he is Dean of the Medical Department of the University of Michigan, in charge of one of the foremost medical institutions of learning in the United States, and he perhaps justly is the foremost medical educator of our times.

I know that you will all enjoy our speaker. I have the pleasure of presenting Dr. Hugh Cabot of the University of Michigan, Ann Arbor, Mich. (Applause). Dr. Cabot spoke on "Some Aspects of Medical Education."

Wednesday, September 19—Second Day—Morning Session

The Association met at 9 A. M. and was called to order by the President.

P. H. Stewart, Paducah, read a paper on "Acute Infective Osteomyelitis," which was discussed by Barnett Owen, J. D. Trawick, Guy Grigsby, J. G. Gaither, Philip Barbour, G. A. Hendon, after which the discussion was closed by the essayist.

Keith & Keith, Louisville, read a paper on "Radiation of Benign Uterine Affections with Report of Two Hundred and Twelve Cases," which was illustrated with lantern slides. This paper was discussed by C. J. Brocman, Cincinnati, S. S. Brown, Louis Frank, and in closing by the author of the paper.

T. L. Bailey, Madisonville, read a paper on "Some Diseases of the Eye which are of Interest to All Physicians," which was discussed by J. G. Carpenter, J. W. Kincaid, A. T. McCormack, J. D. Reddick and E. G. Thomas, W. L. Moore, R. W. Bledsoe, Curran Pope, and, in closing, by the essayyist.

P. F. Barbour, Louisville, read a paper on "Pyrexias of Obscure Origin in Childhood," which was discussed by W. O. Eaton, Julian Estill, E. H. Horine, and, in closing by the essayist.

W. L. Tyler, Curdsville, delivered the oration in medicine. He selected for his subject "The Rural Doctor."

On motion, the Association adjourned until 2 P. M.

Second Day—Afternoon Session

The Association reconvened at 2 P. M. and was called to order by the President.

J. G. Carpenter, Stanford, presented pictures of Lincoln County Pioneers.

W. O. Eaton, Ashland, read a paper on "Management of the Bottle Fed Baby," which was discussed by Annie Veech, J. W. Bruce, S. E. Woody, P. F. Barbour, J. R. Morrison, J. W. Kincaid, J. H. Pritchett, A. T. McCormack and, in closing, by the essayist.

Irvin Abell, Louisville, read a paper on "Problem of the Bleeding Uterus," which was discussed by J. H. Blackburn, John R. Wathern, A. D. Willmoth, E. A. Stevens, and in closing, by the essayist.

G. A. Hendon, Louisville, read a paper on "Acute Injuries of the Brain," which was discussed by B. F. Zimmerman, J. G. Sherrill, Wallace Frank, and, in closing, by the essayist.

C. W. Dowden, Louisville read a paper on "Diagnosis of the Chronic Dyspeptic," which was discussed by J. H. Blackburn, J. W. Scott and, in closing, by the essayist.

Fred W. Rankin, Louisville, read a paper on "Surgery in Duodenal Ulcer," which was discussed by Charles Farmer, Irvin Abell, and in closing, by the essayist.

On motion, the Association adjourned until 8 P. M.

Second Day—Evening Session

The meeting was called to order at eight o'clock P. M., by the President, Frank Boyd.

THE PRESIDENT: I know that those of you who have been here the past few days and have met the distinguished speaker of the evening have learned to love him. If you haven't there is something wrong with your anatomy. We have enjoyed having him with us and we have all learned to appreciate him very much.

The gentleman who will address us is a little older than he looks. He wouldn't admit it, but he is the Emeritus Professor of Surgery of the Detroit College of Medicine. He is also the Consulting Surgeon of the Grace Hospital. He is so much like our people and has acted so much like our folks that we can't understand how he can live up in that cold, frozen country with all those Yankees. We think he really belongs down here.

It gives me great pleasure to introduce to you Dr. J. B. Kennedy, of Detroit, the speaker of the evening. (Applause).

J. B. Kennedy, Detroit, then delivered his address, at the conclusion of which President Boyd said: I think I can voice the sentiment of every one present for the enjoyment that Dr. Kennedy has given us.

THE SECRETARY: Mr. President, it has been the custom amongst us for many years to invite our confreres from other states, one of the great master minds of science, to come to us and bring us a message that we might carry from our meeting place back to our associates at home of the progress that is being made in the world. Among these messengers there have been many great men, immortals in our profession; the Mayos, Billings, Murphy, and the others are all remembered affectionately by us all.

I don't think we have listened to any greater message than the annual message that came this year, a message that has driven straight at our heads and given us something to carry back that is an armor to put around us in our fight against quackery and ignorance and the malice that would destroy our influence and would tear down our great profession, and along with it and with the recognition of the scientific worth that is in us we have gotten the message of that personal inspiration, the knowledge that the great scientist is the great believer in the divinity of God. Along with this great message that is

of value to all our citizenship, each of us will go back, I am sure, with a renewed faith and a renewed zeal in our personal lives to do better things and bigger things for Kentucky.

I want to move you, sir, that amongst those immortals that we are so proud to have as members of our Association, we include this man who in the week that we have been here together has become our friend and who tonight has been our philosopher and guide. I move you that by a rising vote we elect Dr. Kennedy as an honorary life member, one of the twelve now living, of the Kentucky State Medical Association. (Applause). The motion was seconded and carried unanimously by a rising vote.

THE SECRETARY: Ladies and Gentlemen, we are going to have the privilege tonight of hearing a Kentucky doctor, a country doctor, one who came from further in the backwoods than any man here, from a county that hasn't a railroad in it, and in the time that he lived down there it didn't have a road in it and had very little else but some great hearts and minds, but has developed one of the greatest asylum superintendents in the United States, Dr. Fred La Rue, one of our honored members who is going to explain the work of the Eastern Kentucky Asylum in the moving picture to be shown. We are all proud of him and love him. We are proud because we know the love and zeal with which he has done his work.

FRED LA RUE: Mr. President, Members of the Kentucky State Medical Association: I want to thank you in behalf of my very worthy Board of Charities and Corrections for your full endosement this afternoon. We will attempt tonight to feature the activities of one of the institutions under this management. I do not hesitate to say to you that they are functioning more properly today than ever before. The Eastern State Hospital is the oldest institution west of the Alleghany Mountains, but we are attempting to make it a respectable place for our unfortunates. We have more than 1400 patients at the present time. We are one of the seven public institutions under control of a non-salaried, non-partisan state Board of Charities and Corrections, serving you without pay and really rendering a very valuable service.

The first picture is a group of the officers of the institution.

Every patient is examined by a medical staff which diagnoses and outlines treatment.

The next picture is the patient sitting to the right at our staff meeting.

Two years ago when we entered the institution at Lexington we had no laboratory. Today we have one of the best equipped laboratories in the country. Every patient has had a blood test, a blood Wassermann, and a thorough examination—as thorough as any usually made in the laboratories of our country.

We have one of the latest up-to-date X-ray machines. We find it a very valuable asset to our institution for diagnostic purposes. We have one of the best equipped operating rooms that it has ever been my pleasure to see.

We have a full-time dentist from West Liberty. Fortunately or unfortunately he recently married and left me.

That is a ward in the dormitory for the tubercular patients, the females; the other end is for the males.

Occupational therapy we consider a godsend to the insane mind. Until recently the patients sat idly in the ward. We are attempting to interest all of them in some form of occupation.

That is our tailoring department where they make all the clothing that is used by the men patients in the Eastern State Hospital. That is an Englishman in the center in charge of that department.

That is one of our workshops. A lot of weaving and sewing is done there, and in that department they make all of the clothing that is worn by the females in the institution.

That is a group of women sewing carpet rags. They are happy and contented and better patients and certainly more likely to make a recovery than by sitting idly doing nothing.

That is a basket making department, and there is our weaving department. I am sure you would be surprised to see the number of table runners, rugs, and so forth turned out in this institution.

Mr. Joseph P. Byers, Commissioner of Public Institutions, who was called in the last legislature a valuable asset to Kentucky, is shown there.

This is a quilt made from wool.

We do not make any attempt to commercialize the products in our departments, but we use most of them in our institution.

This is our toy department. A group of men there are engaged in making toys. They usually begin in a kindergarten way and work up to something better and more substantial.

This is Mr. Hazel, our occupational therapist, formerly from Wisconsin and came to me from Paducah. He was trained in Chicago.

These toys last Christmas were given to the Elks' Club of Lexington, that is most of them were. This next Christmas they will be sent to the feeble-minded institution and the other institutions that need them.

There is where the brooms and brushes and mops are manufactured. The boy in the rear at the loom is making hammocks. We buy the

broom corn and put the brooms up, and you will see all those working on them are patients except the one man to the left.

This is a group of women preparing vegetables for the kitchen. This is a daily routine, especially during this season of the year.

We attempt to interest our patients in amusement and recreation. A weekly dance is held at the amusement hall every Wednesday night. During the summer months we have the old-fashioned grand dance out on the lawn, and frequently we have five or six hundred patients present. Male employees dance with the female patients and female employees dance with the male patients. They really get a great deal of pleasure out of their dancing.

Here is a group of patients on the lawn for exercise and calesthenics. On this particular occasion they had a tug of war, and we usually give a premium for the ones that outpull the others. There is also a gunny-sack race. During the summer months we have a screen outside where we have moving pictures.

Here are three patients who served a long, long time in the institution and will remain there, of course, for life.

It costs more than $30,000 to care for these people.

Here was the condition of the backwing of our male wards three years ago. The walls were torn out, the brick removed and thrown into an open dormitory. In putting up this new brick building, forty-two rooms were used for the male employees to sleep in.

There is a farm scene—men engaged hoeing. They come to their meals hungry and eat heartily and sleep well and are happy and contented.

Here is a dairy herd. Practically every cow is a good producer. They are tested for tuberculosis annually. I think in a short time we will have an accredited herd. (Applause).

The session adjourned at nine-twenty o'clock.

THURSDAY, SEPTEMBER 20—THIRD DAY—MORNING SESSION

The Association met at 9 A. M. and was called to order by the President Frank Boyd.

A. D. Willmoth, Louisville, read a paper on "Electro Coagulation Versus Operation in Cancer of the Uterus," which was discussed by R. C. McChord, E. G. Thomas, J. B. Kennedy, and, in closing, the essayist.

W. F. Boggess, Louisville, read a paper on "Recognition of Some of the Common Affections of the Endocrine Glands," which was discussed by J. B. Kennedy, Curran Pope, T. C. Holloway, E. R. Palmer, and, in closing, by the essayist.

J. D. Allen, Louisville, read a paper on "The Significance of an Increased Blood Uric Acid," which was discussed by W. F. Boggess, and, in closing, by the essayist.

L. K. Baldauf, Louisville, read a paper on "Consideration of the So-Called Primary Anemias," which was discussed by J. G. Carpenter, J. D. Allen, and, in closing, by the essayist.

A paper by E. C. Roemele, Frankfort, entitled "The Venereal Problem, and a paper by C. A. Vance, Lexington, entitled "Surgical Diseases of the Spleen, and a paper by Carl L. Wheeler, Lexington entitled, "Management of Stone in the Urinary Tract," were read by title, ordered published in the proceedings.

As there was no further business, scientific or otherwise, to come before the meeting, a motion made, duly seconded and carried, the Association adjourned to meet at Louisville in 1924.

ARTHUR T. MCCORMACK, M. D.,
Secretary.

ATTENTION LOUISVILLE ALUMNI

A large number of the alumni of the Louisville medical schools are expected to attend the alumni reunion dinner to be held under the auspices of the Louisville School of Medicine on November 14th, at the New Willard Hotel in Washington. It is hoped that the banquet will be the largest ever held by Louisville alumni attending any convention.

The New Willard Hotel is headquarters for the convention and easily located by all. In order to provide sufficient accommodations, it is hoped that every alumnus who expects to attend the dinner will notify, at the earliest possible moment, Doctor Emmet F. Horine, 307 Francis Building, Louisville, Kentucky. After November 10th, Doctor Horine's address will be New Willard Hotel, Washington, D. C.

The Urobilin Problem.—Weltmann says that Muller's experiments cannot be taken as proof of the enterogenous origin of urobilin, since urobilinogen is found regularly in the bile of swine. Consequently, the urobilinogen which appears in the urine of persons with the common bile duct obstructed, after ingestion of swine bile, is due to the urobilinogen content of the latter. He adds that urobilinogen is seldom found in the serum in liver disease with jaundice, but it is frequently found in pneumonia and other infections, with tumors, and in severe heart defects. The conditions responsible for the appearance of urobilin in the serum are the inability of the liver to destroy the urobilin that reaches it, and modification of the blood albumin, rendering it physically less capable of binding the urobilin.

OFFICIAL MINUTES OF THE HOUSE OF DELEGATES OF THE SEVENTY-THIRD ANNUAL MEETING OF THE KENTUCKY STATE MEDICAL ASSOCIATION HELD AT CRAB ORCHARD SPRINGS, SEPTEMBER 17, 18, 19, 20, 1923.

September 17.—First Meeting Of The House Of Delegates

The first session of the House of Delegates of the Seventy-Third Annual Meeting, Kentucky State Medical Association, held at Crab Orchard, was called to order at one-thirty p. m. by the President, Louis Frank, of Louisville.

THE PRESIDENT: The House of Delegates will come to order and the first order of business will be the reading of the minutes of the last meeting.

V. G. KINNAIRD, Lancaster: I make a motion that the reading of the minutes be dispensed with.

The motion was seconded and carried.

THE PRESIDENT: The next order of business is the report of the Committee on Credentials.

THE SECRETARY: I suggest that the Committee on Credentials accept the signed credentials that have been submitted subject to correction.

THE PRESIDENT: Without objection, that will be done.

The Secretary called the roll.

THE SECRETARY: Mr. President, a quorum is present.

THE PRESIDENT: A quorum being present, the House of Delegates is ready for the transaction of such business as may come before it.

The next order on the program is the reading of the report on program, Dr. Boyd, of Paducah.

FRANK BOYD, Paducah: Mr. President, for the Committee I desire to submit the program as printed and move its adoption with the exchange of the paper of Doctors Keith and Keith which comes on Thursday morning as No. 4 for the paper of Dr. Cowley, of Berea, which is No. 4 on Wednesday morning. With the interchange of those two papers and the change of the time of the meeting of the Surgical Section from the time it is printed at ten a. m. this morning to eight p. m. Tuesday evening, I move its adoption.

The motion was seconded and carried.

THE PRESIDENT: The next is the report of Committee on Arrangements, M. M. Phillips, of Crab Orchard.

M. M. PHILLIPS, Crab Orchard: The Committee on Arrangements desire to state that we have made arrangements with the people in town to take care of the doctors and guests when the rooms are filled here at the Springs Hotel. In order that we may all be here and near to the meetings we are going to ask you to be just as charitable with your rooms as possible in order that as many may stay here at the Springs as possible.

I want to call your attention, members of the Society, to the old brick house just two miles from here, those that want to go to see it, and to the beautiful scenery at Halls Gap just two miles from here, said to be the grandest view in Kentucky. I want to say to you officially that the town is wide open here to you this week. As you already know, we can't make the arrangements in a small village like this for a meeting as can be made in a city. Therefore, we ask you to be considerate with us for we have done just the best we could. We are glad to see so many here. (Applause).

THE PRESIDENT: I am sure the House of Delegates appreciate Dr. Phillips' statements. Inasmuch as Dr. Phillips is also the Mayor of the city, you gentlemen may know that you have the key to the town. When he says it is wide open he means just exactly what he says.

The next thing on the program is the report of the officers, and first of these is the report of the President.

THE PRESIDENT: I have no formal report but for fear that some of you may not understand thoroughly conditions as they are in our state and what our profession is facing, I want to read to you just a few lines, if you will indulge me to that extent, of the report of the Council and call your attention to an effort that is being made by certain people in the state to drag the profession of medicine into petty party politics. For a number of years we have been out of politics. We are, I hope, above party politics when it concerns our individual profession. We are looking for the good of the profession for the benefit of the people as a whole, and when it comes to public health questions and when it comes to doing that which will benefit Kentuckians, it makes no difference whether we are Democrats or Republicans or mugwumps or prohibitionists, then we all stand for the same thing.

But there is a very strong effort being made to upset conditions as they are, to drag the State Board of Health and health matters again into politics and make them the plaything of those who would profit by doing so.

I would like to call your attention just to this paragraph for fear that all of you may not have read it, of the report of the Council. "There has never been before a time in the history of Kentucky when progressive medicine needed so to be on its guard in order to prevent the control of public health machinery of the state by politics, and the overthrow of our splendid practice act by those who desire to profit by misleading and mistreating the sick and unfortunate. The plan of attack this year will be along several lines.

"A suggestion is being made that all the boards of examiners including not only those which are now under the control of the State Board of Health but those having charge of dentistry, pharmacy, nursing, embalming, plumbers, expert accountants and all other learned professions and trades should be put under the control of a state commissioner of registration who would be a layman not knowing anything about any of them and all the progress which has been made for the benefit of all the people in the various professions and trades for the last twenty years would be thrown away as has already been done in Illinois and a number of other states which are trying this plan.

"Another suggestion which has been frequently presented heretofore and which we have so far been able to defeat is the creation of a separate board of examiners for each school or cult in the practice of the healing art."

In fact I know that in a recent campaign several thousand dollars were put into this state for the benefit of one of the candidates by the chiropractors.

"Such a plan has been tried in a number of states, notably in California, and it has flooded that state with cults and empirics who do little else than harm. Another suggestion is that the State Board of Health should be abolished and a state health commissioner should be appointed by the governor.

"This is the plan now used in a number of states and means the change of a public health administration with the election of each new governor and prevents the continuity of plan and operation which has not only made our state board of health and that of other states with similar plans the most effective but which has destroyed and put under the control of politicians great organizations built up over many years. Under the plan by which the Board of Health is now selected in Kentucky, the nominations of professional societies safeguard the state from political control and are essential to public health administration. In many states where political control of the health department has been provided by legislation there have been sharp divisions between those engaged in the practice of preventive medicine.

"Others are urging the repeal of all or part of the medical practice, being unmindful of the fact that Kentucky is the only state in the union which is free from advertising and itinerant doctors and that both its urban and rural districts are better provided with physicians than probably any other state in the union considering the conditions of our roads and schools."

I would seriously call this paragraph to your attention. I would have you ponder it and think most carefully of it, because the profession is today unfortunately menaced and seriously menaced.

One other point which I would call to your attention is the establishment or at least the consideration of the establishment of societies in each councilor district. I have not discussed this with the Secretary. I don't know what his views are, but I do believe that probably the time has come when it might be well for the House of Delegates to consider the establishment of a district society in each councilor district in the state. There are many counties in which the societies exist merely to retain their political entity as a part of the state society in which there are very few if any meetings, and I believe that with councilor district meetings once a year, say mid-year between the meeting of this society, say in May, a good month in this State, we would have better attendance from those in those counties where there is not an active organization and that there would be a consequent greater interest possibly in the State Society. I would present this matter for your careful consideration.

Other than that the President has nothing to report. We think we have about the same number of members in the Society as we have had for the last three or four or five years. Things do look bright. If we will stand together and make our voice heard in the community and if we will make it heard and let the politicians know that we do stand for something, I think we may accomplish a great deal in maintaining the present medical practice act. If we stand idly by I think we are in great danger of seeing this act probably modified to such a condition that we will become but a plaything of politicians. (Applause).

The next is the report of the Secretary.

THE SECRETARY: Mr. President, I have no formal report to make. The fact that there is an organization in every county in the state, three-fourths of them functioning, is the outstanding part of the Secretary's report. The various councilors have done more and better work than has ever been done

in the history of the Association since the first three years after the reorganization. A remarkable fact will be reported at this meeting that for the first time in the history of any state association, the eleventh district of Kentucky will report every single physician practicing in the district a member of his county and state medical society. (Applause). This breaks a national record and I know everybody will share the pride that the members from the eleventh district feel in the fact that they are actually at work and every one of their counties has an active working society that is regularly meeting and functioning and doing business. It is of collateral interest that from those counties every member of the legislature will vote and work with the medical profession. That is not the case in any county unless the county society is actually functioning.

THE PRESIDENT: The next is the report of the Treasurer, Dr. McClure.

W. B. McCLURE: I submit the published report as the report of the Treasurer. I might say that we are just a little harder up than usual. This is due, in part, to the fact that the expenses have been very heavy during the past year. You will know it by the items in the report of the Treasurer.

THE PRESIDENT: The next thing on the program is the report of the Council, Dr. McChord.

R. C. McCHORD: Mr. Chairman, I just simply want to submit the published report of the Council. It is rather elaborate and it has been printed, as stated. I don't think it is necessary to read this report at all because it has been published and I submit the report as in the JOURNAL.

THE PRESIDENT: That report is not very long, Dr. McChord, and there are some very important things in there, some of which might be repeated I think.

R. C. McCHORD: If it is the sense of the house that I read it, I will be glad to do so.

A motion was regularly made, seconded and carried that it be read.

R. C. McChord read the report in the annual number of the KENTUCKY MEDICAL JOURNAL.

THE PRESIDENT: I want in behalf of the House of Delegates and the Society to thank Dr. McChord, and I am sure that I bespeak the appreciation of the House of Delegates for this most excellent report. Without discussion it is customary to refer this to the Committee on Report of Council, consisting of C. W. Kavanaugh, B. C. Wilson and W. B. Moore. But while we refer the report to this Committee and while it is not customary to discuss this report, it is my privilege as well as my pleasure to ask one with whom you are all acquainted, one who by ties of blood, by professional interest and by his relationship to our profession has the deepest sympathy and knowledge of our work and what we are trying to accomplish, ex-Governor Beckham, to address you on this report.

HON. J. C. W. BECKHAM: Mr. Chairman and Gentlemen of the House of Delegates: I am glad to be here on this occasion with the leading doctors of our state and I feel it quite an honor to have the privilege of speaking for a few minutes upon some of the questions that interest not only your profession but also to a very considerable extent, I believe, the people of the state. As you may know, I bear somewhat an official relation to your profession honored by your organization with designation as one of its attorneys to advise and aid in the enforcement of the laws.

Coming before a gathering of doctors as a lawyer, I couldn't help but recall an old, time-honored anecdote. I think it is sometimes unpardonable to perpetrate old anecdotes upon an intelligent gathering like this, but as the years pass along with me I find I get more and more partial to the old things and even to the old jokes. I am glad to see here these younger members of the profession, and I especially enjoy seeing those veterans who have rendered such great service to your profession and to the people of the state, like Dr. Richmond and others. And so I say I like these old anecdotes. The older members here may have forgotten this one and the younger ones possibly never heard it.

It was the story of a very sick man whose end was rapidly approaching. The minister had done his duty in preparing his soul for its flight, and then he was asked if there was anything else he wanted. He said, "Yes I want my doctor on this side," and the doctor was brought in, "and I want my lawyer on the other side of me," and with a smile of resignation and peace he said, "Now I can die like my Savior." (Laughter).

I have always felt a particular interest in the profession of medicine. It may be that the condition of my health in my younger days brought such questions particularly to my consideration and attention, so that when I first entered public life as quite a young man, and as a member of the legislature, I soon became acquainted with that matchless leader of your profession in the state at that time and later, Dr. McCormack.

I have always had an intense prejudice against imposture and quackery in any profession whatever. I do not like to see it in the profession of law, in the profession of medicine, and while some of those who haven't been so kindly disposed toward me in the

past may not agree with me now, I have never liked to see it in politics. I believe that the state as far as it is possible should give its assurance to the public that those who profess to practice a learned profession or any profession among the people are reasonably well prepared to do so. I do not believe in paternalism in government, but I do believe that it is one of the special provinces of government, that the state should, as far as it is possible, give assurance to the public that when a man comes among them and undertakes to practice a profession to treat the sick, and to heal diseases, he is at least somewhat qualified as far as it may be by state regulation, to do these things. It is for that principle that you have had your hardest fight in Kentucky and elsewhere, and I am glad to say that Kentucky has been no laggard in that respect. There are those who may justly criticize our backwardness in the matter of schools and colleges and of roads and some other things, but we all know that in the matter of organization for the protection of public health, Kentucky has done more, I believe, in proportion to the means available than any other state in the Union. (Applause).

You have developed and enacted into statutes a system of laws that has been in many instances the model for other states to follow. It has taken hard work to do this. The road that the reformer selects to travel is generally a most rocky and difficult way. You have to overcome the intense prejudices of those that you seek to serve, and so it has been particularly in the development of the system of medical laws in our state. You have had the opposition of ignorance and prejudice, you have had the antagonism of legislators and other officials, and you have had in many instances, and particularly at the present, the organized and well financed power of those who seek to defeat the health laws of your state.

It is not out of place for us again to pay some tribute to the man who more than any other—and it can be said without disparagement to the excellent and splendid services of his able coadjutors—has done more for the health of the people of Kentucky, than any other man, Dr. J. N. McCormack. (Applause). I knew him a long while. Beginning back in my legislative service in 1894, on through the years that I held higher office in the state, in my associations with him I can truthfully say that no man in his generation rendered more useful and valuable service to the people of the state than he did. Of course, in work like that a man incurs many enmities and he was not free from them. No man who aggressively fights for right can ever succeed without making some enemies; but we are all the beneficiaries of the splendid system and work that he directed in building up for our state and the younger men of your profession especially should bear in mind the example he set to the profession of medicine. The day was never too long nor the night too dark, as it has been said, that he was not ready at any sacrifice of his personal comfort and interest to go into any part of the state where pestilence raged, where disease was prevalent, to expose himself in the effort to enforce those sane and intelligent principles and laws of health in the stamping out of disease.

I had occasion to see much of his work, and his career illustrates the fact that in your profession as it ought to be in all professions the duties and responsibilities of a doctor are not alone to practice his profession from a purely commercial and selfish standpoint, but that he can and should render as great assistance to his community, and to his state, as is possible, and that he owes it to the community and to the state in which he lives to give some of his time and his services toward the improvement of the sanitary and health conditions among his people.

It so happens that a condition exists that the doctors are usually working in the effort to remove the need of doctors by teaching people how to live better and instructing them how to avoid disease and epidemics; but that great work has been going on and we cheerfully pay tribute to the noble men in your profession in the past and in the present who are serving their people and their state in this way.

It is a constant fight, gentlemen. All good things have to be carefully guarded and watched lest we lose them. The enemy is always at the gate: and just as it has been in the years past, there are those in the state today who are assaulting the works that you have built up, who would seek to tear down the splendid edifice that has been erected for the benefit of the people of Kentucky. It has been our duty to see much of this work in the last year. You have heard some reference to it from the remarks of your President and others and from the reports that have been read here this afternoon.

There are those who seek to break down, and to destroy this system of laws that has been so wisely built. You find one organization that has been referred to particularly seems to be spending large sums of money in the state in order to defeat the policies that you have followed in all of these years. This organization of chiropractors, an outside organization with a small organization within the state, has been telling and teaching its pupils that they might come into Kentucky, open up their offices and practice their profes-

sion at any place, and that organization with all of its means would stand back of them and defend them in the courts of the state. They have employed able counsel to do so. They have their lawyers from outside of the state and inside of the state to defend against a warrant or indictment any representative of this school of practice who may set up in a community in this state to practice that profession.

I should say here in passing that there are some of these chiropractors who have shown the proper spirit and in a commendable manner have recognized the authority of the law in the state and are abiding by that law. They have formed a separate organization. At present it is a small one, but the larger number of them, backed up by these chiropractic schools, and by the state organization, are openly defying the laws of your state. It is a matter that should appeal not only to the doctors but to all law abiding citizens.

We all know that in this period of unrest, turbulence and restlessness that have existed since the late war, it is very difficult to enforce many of our laws. The people are not as respectful to the laws and to those in authority as they were accustomed to be. I am not pessimistic and I do not believe that such a condition is going to continue. I believe that conditions are bound to improve, but we know from many sources that throughout the country and throughout this state there are organized efforts not only in this line but in other lines, to overthrow the laws and even the Constitution of the United States. So serious has this been found that the American Bar Association at its recent session gave it considerable attention. Hundreds and thousands of publications financed by Bolsheviki and anarchists abroad and some in this country are spreading the doctrine of disobedience to law throughout the land. To offset that movement and other movements it was found advisable that there should be revived among the people a higher regard and a greater consideration for the fundamental institutions of our land; so this week throughout the country, in our cities and towns, the people have been called upon to pay tribute and honor to the Constitution of the United States, to get back to that great instrument which was pronounced by Gladstone as the greatest document ever struck from the minds of men. It is a fitting time and it is well for us to consider it here as citizens and not as professional men alone that the maintenance and preservation of that great document, and the passing of it on to our posterity undefiled in its strength and power is as important a matter as the American people can consider at this time. In these restless and turbulent times we are apt to forget the old; we are so eager for the new, looking for new theories and new ideas, that we forget those fundamental institutions upon which the great fabric of our government and our civilization rests.

This may seem a little beyond the question that I am to discuss here today, but I could not resist the temptation to speak of it. There is no greater duty confronting us as citizens and as professional men than by our example and by our lives and our efforts to inspire our people with a higher regard for the laws and the institutions under which we live. Let us slow down the pace somewhat, and get back to the old principles upon which this country has grown to such magnificent proportions that all of the world looks up to it now as an example. Let us fight lawlessness wherever we may see it, the bootlegger or the quack or any other who may violate the laws; and it is up to the doctors to do their part, because there is no more influential profession among the people than the doctors. The lawyers have their influence, but the doctors reach a larger number of people than even the lawyers, and the people whom the doctors visit have a high regard, and a respect, not only for their professional attainments but also for their general ideas upon conditions.

We see this organized group flagrantly, and defiantly, breaking the laws of your state, financed by money that is ample to secure the very best talent obtainable. I am not criticizing those lawyers who represent them. The lawyers have to be sometimes like the doctors with their patients, and they cannot always examine into the character and conduct of their clients. But there are foreign unlicensed chiropractors now not only defy the laws that have already been enacted but are exerting their influence toward the next legislature and the officials in your state government to change those laws, and make it still easier for quacks to flourish.

There are some who say, "Why doesn't the State Board of Health and its attorneys stop these men who are violating the law?" I wish that we could; I wish there were some power which we could exert that would enable us to do that, but under our system of government you know the principle of local self-government is paramount. If you find one of these chiropractors in your county who refuses to take his examination for a license as the law offers it to him, and who doesn't register, the State Board of Health has no power in that case and its attorneys have no authority except in an advisory capacity. It is a matter of local regulation and enforcement. If he has violated the law and it can be proved that he has done so, it is the duty of the county attorney to take out a warrant against

him in the county court or for the commonwealth's attorney and county attorney to indict him in the circuit court. We can not go into that county and do those things, we have no authority under the law to do it, and we can only assist these local authorities when they are willing to do it.

I can appreciate how many doctors feel about this. I admire the delicacy of sentiment that they feel. A reputable physician in a community doesn't want to be placed in the attitude of prosecuting one of these quacks because people may say that he is jealous of the fellow's competition. That is an embarrassing situation, but yet you owe it to the community and you owe it to the profession to do all that you can as citizens and not as doctors alone to see that these quacks are driven out. I have no doubt that in time we are going to get rid of that evil. The legislature passed a very fair and a very liberal law in the matter of regulating these chiropractors. They have the right, out of their association, to furnish a list from which are appointed three members to examine applicants upon the elements of that profession, and then they are to stand an examination upon three of the elementary subjects of medicine, anatomy, physiology and pathology. They pretended in their first complaint that the State Board of Health was not fair to them, that it would give them such examinations upon those subjects that would make it impossible for them to pass. But that was not true. Only about a week ago one of the leading chiropractors, of the state who had been very much prejudiced against the State Board, told me that he had been opposed to that law and to any control by the State Board of Health, but that he had found out that the State Board of Health was exceedingly fair to them and he did not want to see any change in the law at all, and that the chiropractor had no just complaint whatever.

It is a very fair law. If they succeed in breaking it down, it means the opening up of this state to all the graduates that are turned out of those various schools without examinations. Other states have awakened to the danger. Some of them have already driven them out, or have compelled them to take the examinations upon elementary, essential subjects before they could receive licenses. They will be at the legislature next winter in full force to lobby with and influence if possible, your legislators. They will seek to create all kinds of prejudices against the State Board of Health, and against the medical profession, in their efforts to amend or repeal the laws and open up the state without examination, and without control, to this flood of foreign chiropractors. If they do that you might as well let down the bars to all other charlatans and imposters who want to come into the state. If you permit that to be done you have destroyed all the splendid work that has been accomplished by the labor of you doctors and those before you in the last generation.

I am not urging you to get into politics, I have never believed that your organization should in any way be involved in partisan politics. I can remember during the years that I was Governor many efforts were made to induce me to show political consideration and partisanship in my official relations with the State Board of Health. I am sure that there are some here today who will bear me out when I say that I never allowed political consideration to control my action at any time in those matters. We don't want any of that kind of politics, but we do want the active, earnest efforts of the profession in this state in upholding what you have won and established in all of these years. Let your legislators, the members of the house and the members of the senate, know how you think and feel about this matter, that you don't want to see this work destroyed or multilated by any legislative tinkering at the behest of a lobby financed and sent into the state by some school of chiropractic located outside of the state.

You have a considerable influence that way, gentlemen, of the medical profession. I can appreciate, as I say, the delicacy of sentiment that you may feel about exercising it, but you must lay that aside, because, as I have said before, these are times when the effort of every good citizen whether he belongs to the medical profession or the legal profession or any line of business should be directed toward those who make our laws and those who are charged with the enforcement of them that those laws must be respected and obeyed, and I have no doubt that with the influence that can be exerted properly and legitimately by the splendid men in your profession in Kentucky today, a great deal can be accomplished not only in protecting you from legislative discrimination but in the enforcing of these most just and reasonable laws of the commonwealth.

As a Kentuckian, I do not want to see anybody in this state violate our laws, and as Kentuckians we should particularly resent a flood of law breakers coming in here from other states with the assurance that they shall be protected with money and talent whenever they should break the laws of the state. Remember, therefore, that the State Board of Health is doing everything in its power in the enforcement of these laws, but that power is limited. It is after all a matter of local self-government. You can't well enforce a law in a county unless the people and officials of that county want the law enforced. So let your influence be directed upon these officers

of the law. Some of them are anxious to do their duty. Unfortunately we have found some in the state who are unwilling to do their duty in the enforcement of these laws, but your influence should go out in the effort for the stronger enforcement; and be on guard to watch those elements in the state, backed up by some of those of your own profession who have their grievances and their dislikes. Be on your guard to see that your coming legislature shall do nothing that will impair the strength and the value of this admirable system.

I must not take up more of your time. I feel not only a professional interest in this subject but as a citizen who has always been so deeply interested in such matters no one takes more delight than I do in those statistics that have been read showing how gradually you have struggled on and on with the improvements and discoveries of medical science until now you have practically obliterated some of the great scourges that have afflicted the people in the past, and that you are reaching out and conquering those that have not yet been brought under control. I am delighted to see these meetings of the leaders of your profession, and I trust that you will keep up this good work, preserve that splendid spirit of devotion to it, of self-sacrifice that Dr. McCormack and those who worked with him showed during their years of service to the state. May these younger doctors especially remember to do their duty to the state as the older ones have done, and while engaged in their professional work, help to preserve the Constitution and the laws of our country and those fundamental principles and policies upon which we have grown so strong and great in the eyes of the world. (Applause).

THE PRESIDENT: I am sure, Governor, that the House of Delegates as well as the Kentucky Medical Association and the profession is very, very much indebted indeed to you for calling these matters to our attention so forcefully. I personally feel that what you have said will be carefully considered by those who have heard you, and I believe I can say in behalf of the profession of the state and particularly those that are here and have heard this most excellent address that they will stand fast and that their light shall so shine that when the time comes they will not be found wanting but will do the proper thing.

The next thing on the program is the reports of the Councilors. The first of these to report, I believe, is our friend, Dr. Richmond, from the First District. Dr. Richmond, the House of Delegates will be very glad indeed to hear your report.

Report Of Councilor Of The First District

W. W. RICHMOND, Clinton: Mr. President and Gentlemen of the House of Delegates: I have to make you just a verbal report concerning the First District.

The First District is composed of thirteen counties. I am happy to say that the thirteen county medical societies are well organized. They are all doing good work. In the organization of the First District the number is twelve less than last year, not, however, due to any want of interest or any less work or anything detrimental concerning the organization, which is better than it has ever been before.

We have thirteen organized county medical societies; they are all doing good work. We have 185 this year; we had 196 last year, I believe it is 12 less at any rate than it was last year. That has been due, gentlemen, not to any lack of interest or any defective organization in the different counties, but simply due to some deaths, some moving away and a few others disqualified in membership.

I haven't visited all the counties in my district. I haven't visited over five or six counties. That has been due to the fact that my health has been so that I couldn't visit them, but I have written numbers of letters to the secretaries of all the county societies in the district, and I have written to a number of members of influence in the different counties and have been in communication with them and know what they have been doing and what they are doing.

I am just glad to say that the First District of the Kentucky State Medical Association is in a splendidly organized condition and I think our Secretary will vouch for what I say, and the work is going on with greater interest than it has ever before. I visited Ballard, Carlisle, Fulton, McCracken and Graves Counties, and some of those I visited twice. I have written to all the secretaries and to numbers of the more influential members of the thirteen counties at different times through the year. I have kept in communication with them and I know what we are doing in the First District. We have a splendid district and all of the societies are taking greater interest than ever before. The work is going on more effectually and with greater interest, I think. Some of them are meeting regularly every month, some of them every two months in the winter and every month in the summer.

I will be glad to answer any questions any one would like to ask me. I am sure that what I say verbally in this matter is correct. I know whereof I speak. The First District is in a splendid condition and is doing better

work than has ever been done before. (Applause).

THE PRESIDENT: Dr. Blackburn, Third District.

Report Of Councilor Of Third District

J. H. BLACKBURN, Bowling Green: Mr. Chairman and Gentlemen: In the Third District we have thirteen counties, twelve societies. Last year, 1922, I made the effort to visit each county society so far as practicable. It had occurred to me that the average county society was not doing the work that should be done or might be done. After conferring with different members from different county societies, in April we called a meeting of the Third District Medical Society, organizing in Bowling Green. We have met every other month, April, June, August, still having another meeting yet for the year. Thus far our attendance at these Third District meetings has been practically one hundred and fifty doctors.

How many county societies meeting two or three or five at a time get one hundred and fifty doctors to go? I believe that in the Third District the Third District Society is helping to solve the problem.

One reason we haven't met every month is the fact (and I have insisted to the Secretaries and Presidents of the individual societies that they should meet on the alternate months and in that way our society does not interfere with the regular county society meetings, permitting them to meet every other month during the warmer season, the Third District meeting on alternate months) we have met in three different parts, geographically, of the District, and our next meeting is to be held in Russellville, the others being in Bowling Green, Glasgow and Scottsville. The reason for this geographic distribution of the meeting points is to encourage members in the different parts of the District to attend.

I haven't been able to visit so many county societies, in fact only two or three of them during the year. However, I do feel that the Third District Society which has been organized and is functioning along the lines suggested by our President today, is a real help in solving the problem of increasing the professional attainment of the average doctor. (Applause).

Report Of Councilor Of The Seventh District

V. G. KINNAIRD, Lancaster: In the Seventh District we have nine counties with nine societies. We held a meeting in May of three county societies here at Crab Orchard, Lincoln, Garrard and Rockcastle, with good attendance. It has been impossible to visit all societies in person but I have sent out numerous letters to all the secretaries and all non-members. I think there are 77 members and 22 non-members. Next year I hope we will have one hundred per cent membership. (Applause).

Report Of Councilor Of The Eighth District

J. E. WELLS, Cynthiana: The membership of the Eighth District shows a gain over last year.

The District is the second largest in the state, being outnumbered only by the Fifth with the city of Louisville.

The counties of Bracken, Bourbon, Campbell-Kenton, Fleming, Jessamine and Nicholas showing gains, while Grant, Harrison, Pendleton and Scott show losses; Mason, Robertson and Woodford, remaining the same as last year.

The loss in Grant, Pendleton and Scott is due to lack of interest, while the loss in Harrison is not due to lack of interest, as they never miss a meeting and always have good meetings, but to the fact that one member failed to pay his dues and two members were expelled for practicing the colossal fake known as the Abrams Treatment. In other words, the Electronic Reactions of Abrams "backfired" with these two members.

The interest in most of the counties in the Eighth District is not what it should be. In July I visited Bracken County and effected a successful reorganization with some live young men backed by the older members of the profession that I think will bring forth good results. They have had one splendid meeting since the reorganization and the interest is good.

If some of these apathetic County Societies would attend a few meetings of the Harrison County Society, and see the good results of their interesting meetings each month, I am sure they would take heart and get busy and make every county in the Eighth District a rival of the best county society in the state.

I am not actuated by any false pride in making this statement about the Harrison County Medical Society. As the records will show, this society has never missed a meeting and the attendance and interest have always been good. While the membership is not large, it is made up of clean, ethical, up-to-date men, and they propose to keep it that way. "Quality not quantity" is their motto.

Report Of Councilor Of The Sixth District

R. C. McCHORD, Lebanon: My District is not very large. I am glad to say that we have kept up our membership practically the

same as we have always done. On account of the death of a few members and moving of others, we have gained a few and lost a few. We have lost possibly in numbers two out of our District. We are two less than we were last year. I am glad to say that we are doing pretty good work in our district and the members are all ethical, and they are men up to date, and I have very little trouble in keeping them in line. I am fortunate in having a district of that kind. We have no trouble among ourselves. The only trouble is, I think, that some of our doctors have given a little too many prescriptions for alcohol. With that exception I have no complaint to make. We are all working strictly along ethical lines and getting along nicely together in our District.

Report Of Councilor Of The Ninth District

J. W. KINCAID, Catlettsburg: The Ninth District shows a small net increase over last year. There is considerable interest, great interest in fact, manifested in three or four of the societies. In others the interest seems to lag somewhat. That is due to the fact that it is so difficult to get the doctors out to meetings. They have so far to come that they have to stay all night. They have to stay away from home so many nights as it is that they prefer not to willingly go out and stay away another night. Train schedules make that condition. If we had a different train schedule the men could leave their homes on the branch roads and get into the county seats and get back the same night. There would be more meetings and greater interest.

There are no troubles that need attention in our District. The membership of our county societies are loyal to their counties and in the main they are loyal to the state. Of course, you always find some stones under trees that produce the most fruit. Men who are trying to keep up organizations sometimes relish a little conflict of that sort because they know they are in the right and that in the end right will prevail.

Report Of Councilor Of The Tenth District

R. J. ESTILL, Lexington: Mr. President and Gentlemen: The Tenth District is, as some of you know, numerically speaking the biggest district in the state. There are seventeen counties. Most of them, however, are very sparsely supplied with doctors, ranging from one to five. In one of my counties I have always been about two jumps behind the doctor and never able to find him. In the other counties, however, we have organized societies that are really doing good work.

I might say by way of explanation for the good work that is being done in Harrison County by Dr. Wells and his Society, it has been customary for a good many years for the Lexington doctors to go over to their annual meeting and elect their officers for them. (Laughter).

There is one thing that I am happy to report at this meeting. Some of you remember last year that the prognosis for Clark County was very bad. We were unable to get any kind of an organization in Clark County. The county is one of the best in the state with about twenty-two doctors there. Dr. McCormack, Dr. Frank, Dr. Stucky and myself went to Clark County and waded into those gentlemen with gloves off. I am happy to say that that has borne fruit, and I have given a good deal of my time and attention to Clark County this year. I have attended all of their meetings but one. They have a well organized, enthusiastic society and are doing good work.

In conclusion, I want to say that the Tenth District is enthusiastically, and may I add, sir, affectionately loyal to Dr. McCormack in the work that he is doing for the profession and the state at large. (Applause).

THE PRESIDENT: Last but by no means least, Dr. Lock, Eleventh District. (Applause).

Report Of Councilor Of The Eleventh District

J. S. LOCK, Barbourville: I don't know whether you mean that by my physical being or the size of the District. Numerically, some of the Councilor Districts are much larger than the Eleventh, but none of them is any larger than the territory embraced in the Eleventh District.

About two months ago, as is the custom of the Secretary, notice was sent out to each Councilor calling attention to the number of non-members in their respective districts. In going over the list of the Eleventh I found there were only twenty-five men in that District who were not members of their county and state society. I immediately put forth my best effort in a letter to the secretaries and each of those doctors, telling them the situation and asking them to send in their dues immediately. In response to that I received ten renewals of membership or ten dues payable. Then I began to visit the counties in which these remaining fifteen men lived. I want to say to you that the vision of having a complete membership to report for the Eleventh District at this meeting was uppermost in my mind. I had been too busy visiting these counties and soliciting these men to write the report, so I am having to give it to you verbally.

I am happy this afternoon to be able to report to you that every man in the Eleventh Councilor District is a member of his county and state Medical Association. (Applause). Every one of those counties, with the exception of one, the most remote, has its delegates here today ready to take part in this meeting, to stand by in whatever capacity they are needed, and to work with their coats off to see that the dignity of the profession stands. (Applause).

When the roll is called you will find the Eleventh District here ready and willing to serve. (Applause).

THE SECRETARY: Before the next order of business I would like to ask unanimous consent that the report of the Committee on Crippled Children be heard next in order that Dr. Sullivan, who is here as our guest, may have the opportunity of delivering his talk following the report of the Committee, as he has to leave before the next session.

THE PRESIDENT: Without objection, then, from the house, we will call on W. Barnett Owen of Louisville, Chairman of the Committee on Cripplied Children, to make his report.

W. BARNETT OWEN: Mr. Chairman, this is the second year that we have had a Committee on Crippled Children in the state of Kentucky. Whether or not it has brought forth some of the fruits that I will enumerate a little later or whether or not that has been coincidental is beside the question.

From a very conservative survey of the state it has been ascertained that in the state there are between twelve and fifteen thousand poor crippled children for whom there has been no provision for care or treatment. There is not an institution in the state provided and supported by the state for the treatment of such conditions because those institutions must be equipped in a different sort of way from any general hospital which we have at present. That is the reason I say there is not a single institution in the state properly equipped to care for our poor cripples.

We have in Louisville the Children's Free Hospital in which any sort of condition in a child up to twelve years of age can be treated. The most of those cases, I would say, are crippled children. That leaves no provision whatever for children over twelve years of age and, of course, having a limited capacity of only seventy beds, they can take care of a very small number of the children. They are usually glad and willing to co-operate with the limited means at hand. They are supported by the Welfare League, by a small endowment, and by private subscription which is not adequate to carry out in the proper way the treatment of these cases.

In the last year there have been two things brought about which will be very helpful. The first is that the Rotary Club of the state organized at Covington in the spring of 1923 a Kentucky Crippled Children's Society with headquarters at Covington, all the Rotary Clubs taking membership in the State Society, and they contemplate holding clinics in various cities and centrally located towns in the state. They have made a crippled children's survey of the state in which they have estimated between twelve and fifteen thousand of these cases in our state. I think that is really a very low estimate and I want to make a suggestion right here that in making another survey it seems it would be very helpful to have the co-operation of all the school teachers in the various sections and the public health nurses. I think children could be found in that way that probably couldn't be found in any other way. I believe when that is done we will find a great many more children than have been reported here. This is really only an estimate of 100 children to each county, 120 counties being 120,000. In five counties in the Eastern part of Kentucky there was an average of 250, so you can see it is way over that.

In the Children's Hospital last year they only treated about 150 crippled children. As I say, they have a capacity of seventy beds. Due to the character of conditions which we have to treat, it takes a very much longer time to care for those cases than the ordinary surgical case. For instance, in tuberculous joint the minimum treatment is three years. Of course, you can't keep a patient in an active hospital that long.

The Rotary Clubs also have appointed a legislative committee to prepare a bill and have it passed at the next legislature, making it possible for every crippled child who is taken before any of the county judges of the state to be corrected at the expense of the county in which they live.

There will be held in Louisville on September 20th of this week a meeting of the Kentucky Crippled Children's Society at which further plans will be made for this work. It seemed that they could render a more efficient service in a legislative way than any other possible way, because while there are only about one thousand Rotarians in this state, but they are a very influential body.

Another thing that has been done is that the Shriners of Kentucky in the last few months have started an active campaign to raise sufficient funds to purchase a suitable accessible property and have it equipped adequately for the care of crippled children after the active treatment has been done, that is it is a convalescent crippled home to which

these children too sick to be discharged from an active hospital but still not well enough to be sent home may go. There has to be some provision for relieving an active hospital of a bed that should be used for an active case.

The Shriners of Kentucky are going to cooperate with the Children's Hospital in Louisville and purchase a place near the city limits in order to make room for children from any place in the state for active treatment. They will start with probably thirty beds, but we hope to have this place conducted in a way that we can turn out, as near as possible, a finished product. In other words, if we can send a child home with his physical defects so corrected and have him educated so that the occupation which he hopes to pursue is particularly adapted to his physical defect and make him a self-supporting, self-respecting citizen instead of an act of charity and a hopeless cripple, we will have done something.

There is another point that has been brought to my mind that I am not so familiar with, and that is a fund set aside or allotted to the state of Kentucky by the federal government amounting to some $40,000 annually for rehabilitation. That $40,000 has to be doubled by the state which receives it. That is, when a state receives $40,000 it must contribute $40,000, making a total sum of $80,000 annually for rehabilitation. That fund is not being used, except only a small portion.

There is a great necessity for that fund in this way: there is a provision by which that fund can only be used for the rehabilitation of people over the age of fourteen. It seems very senseless and lack of forethought to allow a child three or four years of age and badly crippled with a condition probably existing at that age that could be corrected and that child could be rehabilitated to go, whereas, if you wait until the child is fourteen probably it has passed the time when this can be done.

It seems that the State Medical Association should investigate this fund and see whether or not they can in the proper way get a certain portion of that money for the proper rehabilitation of anybody that needs it. (Applause).

THE PRESIDENT: The next on the program to address himself to the same subject is Dr. John E. Sullivan, of Covington. I am going to ask the Secretary, Dr. McCormack, to introduce Dr. Sullivan.

THE SECRETARY: Gentlemen: In the last few years a great organization has very rapidly spread over the country, an organization that has been formed in almost every town of any considerable size in all of the states—a luncheon club known as the Rotary Club, whose motto is "Service Before Self." It has come home to that organization in a very large way that one of the greatest services it can perform is to these forgotten, neglected children.

In Kentucky the man who has been most responsible for the awakening of the civic consciousness in this regard is of our allied profession of dentistry, a member of the Covington Rotary Club, Dr. John E. Sullivan, and it is a great pleasure to present him to my conferers of the Medical Association to present this question to you because he is more fully charged with this responsibility than any man I know, and I believe he will give you a message that each of you may carry back home with you and may there plant and spread it so that it will reach out into every hamlet in Kentucky and do unlimited good from this time on.

It is a pleasure to present Dr. Sullivan to you. (Applause).

JOHN E. SULLIVAN, Covington: Mr. Chairman, Ladies and Gentlemen: Your time and the period allotted to me on this program is too valuable to be expended in trite remarks as to my pleasure on this occasion. My acceptance of an invitation to address you is token of my appreciation of the opportunity, but I do wish to take occasion to thank those who were responsible for the courtesy extended to the Kentucky Society for Crippled Children of having a speaker appear before this assembly.

It has been said, and truly, that the index of civilization is the degree with which human sympathy meets and supplies human need, and it follows as a corollary to such fact that those who have to do with the healing art have much to do with the determining as to whether our civilization be a reality or is merely a veneer.

You medical men, as you go about your daily routine, are brought face to face with that phase of human need, physical pain, physical deformity, and it rests largely with you as to whether the community as a whole is made acquainted with these conditions. Human apathy is not the least of the obstacles in the pathway of human sympathy supplying human need. Apathy, selfishness and indifference are destructive of and quickly undermine those influences for good that tend to make men wiser and better. Our love for God, for family, for country, for humanity, must not be of a listless, half-hearted nature, but pure and strong and animated with that fervor which glows with the fires of right and duty. Let us recognize and dare to assume those responsibilities that devolve upon us. Let us not be apathetic with regard to those tragedies of human life that confront us daily.

Let us see to it that those whose duty it is to correct or alleviate these conditions are acquainted with them to the end that remedial measures are affected.

The crippled child is here through no fault of his own, but its presence brings responsibility. To whom comes this responsibility? Why to you and to me. It is ours whether we will to accept it or not. Here as ever is in effect a great law of God, the law of compensation. Responsibility is laid upon us, opportunity is presented to us, hand in hand we go—opportunity, responsibility. Opportunity is ours, what will we do with it? Will we by neglect permit this wasted opportunity to become as a bitter dreg or by accepting and utilizing it will we make a sweetening influence that shall soften and mellow all the years of our lives.

Responsibility is ours not simply because of the position we occupy with regard to the health of the community but because we are humans, citizens of this commonwealth. It is a responsibility upon every citizen and it is for us to see to it that our citizenship recognizes, accepts, and, by proper legislation, remedies this condition, the condition of the crippled child.

In the multiplicity of organizations endeavoring to do welfare work it is desirable and even necessary that those purposes which inspire such organizations be set forth definitely. I shall, therefore, endeavor briefly to set forth the objectives and purposes to which the Kentucky Society for Crippled Children is dedicated, namely, to the care, the cure and education of the crippled child wherever he may be found within our borders. To do this we propose first to make surveys of the conditions as they exist in the various counties relative to the crippled child. Second, to make careful study of pre-enactments relating thereto, and to formulate such further legislation as will correct the existing conditions. Third, to aid in the advancement of the science of orthopedics, in the necessary study and research, in the development of preventive measures, in the advancement of the science of hospital management and equipment as pertains to the crippled child. Fourth, to standardize the mode of procedure so that the crippled child wherever located may have available efficient medical, surgical and educational facilities. Fifth, to aid in the establishment of special schools for crippled children that adequate education and vocational training and facilities may be available.

There has always been on the part of the general public some conception in a general way of the problem of the crippled child, but an adequate understanding of the immensity of this problem, the peculiar nature of this problem, has never been in the professional group. Because of this lack of understanding and a consequent lack of appreciation of the needs of the child, adequate facilities to care for these unfortunates have been provided but in few instances, with the result that a very large field in the main has never been touched.

The mental picture that arises in the minds of our hearers when we mention crippled children work is that we contemplate the erection of hospitals. Such is not the case. I regret to say that at least one large organization in our country, while making a most laudable endeavor to benefit the crippled child, is misdirecting its efforts along the line of erecting large orthopedic centers. Were the philanthropists of our country to provide a fund of a billion dollars for the erection and maintenance of an orthopedic center, 98% of that fund would be wasted so far as directly benefiting the crippled child. An illustration: Edgar Allen of Elyria, Ohio, caused to be erected in Elyria some fifteen years ago a hospital dedicated solely to the care of the crippled child. Mr. Allen had the idea that this institution once erected would have the children flock to its doors, but the children did not flock. After fifteen years they have found that they must of necessity go out and exercise diligent endeavor to get the children to the hospital; they have found that with but few exceptions those who have been served by the hospital have been from the immediately surrounding territory. Those of you who have had occasion to try to gain the consent of a parent for the removal of a child even for a short distance for some slight operative procedure know the difficulty of gaining the consent of the parents. The longer the distance of removal the greater the difficulty, and when it comes to removing a child from one state to another, the obstacles are nigh insurmountable. So in this work we have taken it to be fundamental that we must take the facilities to the child and not the child to the facilities.

Last year in New York State two thousand cases of crippled children were cared for. In Ohio something over one thousand cases were cared for, and all without the expenditure of a single dollar for the erection of hospital facilities.

In 1919 less than 80% of the hospital beds of our country were utilized. We have adequate numbers of hospital beds. We do not ask an organization to father nor foster the idea that we expect to spend one dollar for hospital beds. The crippled child case, while, of course, requiring special equipment, can best be handled in the general hospital, for

these children so often require the consultation of various specialists. They require the services of a well-rounded organization, such as is furnished by the staff of a general hospital.

We have taken it as fundamental that we must take the facilities to the children and not the child to the facilities. Every community, however, is not blessed with personnel sufficiently versed in this work to properly care for the crippled child, and we must bear in mind that the child's welfare depends first upon the operative or corrective procedure, second upon the after treatment, third upon the muscle education or re-education, fourth the mental rehabilitation, and next vocational training.

Bearing in mind this fundamental that we have accepted that the facilities must be taken to the child and not the child to the facilities, we have decided that it is wise and expedient that we endeavor to foster the formation of five to ten Orthopedic centers in a state and that we strive to confine the orthopedic practice to those centers. With such an arrangement, these centers being geographically arranged that they may be easy of access and located where we already have hospital facilities at present, there will come a stimulus for the advancement of Orthopedic practice at these points, with the result that the crippled child will have a character of service far more efficient than if he be delegated to institutions poorly equipped and men not especially trained for this type of service.

While we are wishing to have but five or ten Orthopedic centers in the state, we do desire to have a vastly larger number of convalescent homes. We believe that no hospital can handle a large volume of this work without having in conjunction with it the convalescent home. During the offtime long period of convalescence the child and the parents will be much better satisfied if the child can be near at home. In the convalescent home the child can receive the same efficient type of work and at a far less overhead than in the acute hospital.

When we bear in mind that there are 300,000 cripples in the United States, between twelve and fifteen thousand of which are in our state, something of the immensity of the problem is before us. When we further remember that the alleviation of many of these cases is dependent upon the receiving of treatment early after the onset, something of the urgency of this work is before us. Let us bear in mind that any measures that we take at present are merely emergency measures. If we are to have a better race in the coming generations, we must seek to develop preventive measures that these human tragedies may not continue to occur as frequently as they do at present.

It has been said that if men were wise enough they would be good enough. George Bernard Shaw said if we could devise a simple expedient of prolonging human life for a period of one hundred and fifty years, in such a period man following the natural results of his misdeeds would say that it was not a paying proposition to do wrong, and following the effect of his misdeeds would become wiser, he would become wise enough to become good enough and this earth would become a heaven. Oh, that we could bring to men the realization that every misdeed is a cause and that that which we call punishment is an effect and that this law of cause and effect is a law of God that is not repealable. If we could make men realize that wrong and misdoing inevitably bear their fruit of evil consequence in loss or pain or sorrow or remorse; too often it is the pain born into the body of the offspring of him who to satisfy some appetite committed the misdeed and who suffers only the remorse. If men were but wise enough they would avoid some of the pitfalls to which humanity is heir.

Education cannot but play an important part in the bringing of humanity to such realization that they will avoid these pitfalls that bring so much of sorrow and suffering which we witness in these little mis-shapen bodies.

The Kentucky Society for Crippled Children is an organization whose active membership is composed of Kentucky Rotarians. These men are whole-heartedly back of this endeavor to benefit the crippled child. Some who are well versed have accused the Rotarians of desiring to corner all the glory that may be gotten from such an endeavor. Oh, my friends, were there twice as many agencies at work as are in existence, there would not be sufficient to adequately cover the field. It is the aim of the Rotarians to so co-ordinate all the agencies at work that there may be no duplication of effort. It is their desire that the greatest good may accrue to the crippled child from the effort extended and then let glory and credit fall where it may.

On behalf of the Kentucky Society for Crippled Children, of which I have the honor of being President, I want to appeal to you members of the Medical Profession that you aid us in this endeavor, that you get back of this endeavor and go to your legislators, letting them know something of the needs of the crippled child and letting them know that you desire that legislation such as will be presented at the next legislature be put over, that these children may have some of the sunshine of life to which they are entitled.

The American public loves to see fair play. In our athletic contests we handicap this or that player that he may have an equal chance of success, but when it comes to the race of life we tell the crippled child to start and scratch with a normal child. Friends, such is not in keeping with the American sense of fair play. We know that such is not right, equitable or just, and I appeal to you that you aid us in this endeavor to bring joy and sunshine into the lives of these little crippled tots.

It is said that human sympathy is the motive spirit of civilization. It is civilization. The engagement of busy men in a philanthropy such as this of ours, the success of which can bring no personal profits other than the joy of having served, is as a bow of promise spanning the skies of future years, a promise of the further advance of civilization. (Applause).

THE SECRETARY: In order that the Kentucky State Medical Association may show its attitude toward this question and may join in close alliance with the Kentucky Society for Crippled Children, I would like to move you, sir, that we set a precedent that we have never done before in this respect by electing Dr. Sullivan an honorary member of this Association so that we may have the privilege from time to time of joining with him in the great service for this neglected portion of our citizenship.

The motion was seconded and unanimously carried.

THE PRESIDENT: It is my pleasure, Dr. Sullivan, to inform you that you are a life honorary member of the Kentucky Medical Association.

J. E. SULLIVAN: Mr. Chairman and Genltemen, I want to thank you for such an honor. It is an honor that I shall always esteem, and I shall ever by the service that I endeavor to render to these crippled children endeavor to show my appreciation of this honor. I, indeed, want to thank you all.

THE PRESIDENT: The next order of business is the report of the delegates by counties.

The first will be Adair County. Dr. Flowers.

Adair County Medical Society

W. J. FLOWERS, Columbia: There is an ethical membership in our county. We have increased our membership over the preceding year. The meetings have not been held as often in the past year as we desire or expect in the following year.

Barren County Medical Society

C. C. TURNER, Glasgow: In the absence of Dr. Howard I wish to say that there are twenty doctors in Barren County, all of whom belong to the County and State Medical Society. We are having more meetings and more interest this year than we have ever had before. The only objection I ever hear to our doctors is that none of them write prescriptions.

Bell County Medical Society

MASON COMBS, Pineville: We have thirty-seven members in Bell County Medical Society, being all the doctors that are practicing medicine in that county. We meet every alternate month in Pineville and Middlesboro. There is always an active interest and a good attendance.

Boyle County Medical Society

P. C. SANDERS, Danville: Boyle County has fourteen physicians in the Society, two out of the Society. They are a bunch of high type men, a bunch of men that are too well satisfied and really too contented to give much of their time or means to either the county or State Medical Association. They are just a happy bunch and all get along nicely. They are a high type of men from one of the greatest places on the globe.

Bracken County Medical Society

C. R. RICE, Augusta: The Bracken County society was inactive until July of this year. We effected a reorganization. Since then we have had one good meeting. By the enthusiasm shown and the work outlined for the present year, I believe we are here to stay.

Caldwell County Medical Society

R. W. OGILVIE, Princeton: I am sorry to say that the Caldwell Society is not active but they are organized. That is all I can say for them. They are organized one hundred per cent.

Campbell Kenton County Society

J. G. FURNISH, Covington: I have the honor to be one of the delegates from Campbell County. Dr. Stine is also here as a delegate. He hails from Newport. I am from Covington. We have one of the largest societies in the state. By some fortunate circumstance the two counties were permitted to consolidate and I can say that since that has taken place we have a society composed of a large membership. We have been increasing some lately, and I am unable to say just the exact number of members we have. I can say, though, that we have a large majority of

all the members of the profession in both counties. We have regular and good meetings twice a month, and during the summer months we hike to the country in some good favorable place where we get a good country dinner and have a general good time. Our associations are all pleasant. We have a large membership and our discussions are helpful and edifying at all times. We are fortunately located in being just across the river from Cincinnati, and many of our neighbors come over at solicitation or invitation at any time that we request, and give us papers on any subject that we desire. So aside from the value of the papers that are contributed by the membership of the Society, we have that in addition. Those papers always elicit great discussion and are always very profitable to the whole membership.

Our membership is increasing, but slowly. However, we can say nothing disparaging about those who are not members, but I can say that we have the highest class of membership, and we expect to so continue. We have our regular meeting for the advancement of all principles that the high ideals of our profession would have us reach. I am sorry Dr. Stine is not present, as he might have made a more comprehensive report.

Carlisle County Medical Society

T. J. MARSHALL, Bardwell: The Carlisle County Medical Society meets every three months. We usually have a good attendance. The minutes of each meeting are always sent to the JOURNAL for publication as are all papers read before the Society.

We missed our regular meeting at Cunningham in June owing to a misunderstanding of the committee on arrangements. This is probably the first time in the history of the present society that we ever missed a regular meeting.

We have eleven physicians in our county of which ten are members of the County Society. Two or three of these eleven are not active in the practice of medicine, but we usually have a full attendance at our meetings and we usually have a full program.

There is as a whole a feeling of friendship and brotherly love existing among the doctors in our county.

Clark County Medical Society

G. F. DOYLE, Winchester: We have twenty-four physicians in active practice in Clark County, nineteen of whom are located in Winchester and five in the county. The membership of the County Medical Society is nineteen. Of the non-members, three are in Winchester and two in the county.

During the present year we have held regular meetings on the third Friday night in each month, with the exception of July. At each meeting we have had an excellent scientific program, with very interesting and profitable discussions, and there has been a fine spirit of co-operation and the best of feeling among the members.

A baby clinic was established early in the year, under the direction of the Clark County Health and Welfare League, and with the co-operation of the Clark County Medical Society, and clinics have been held each month in Winchester, and the members of the society generously contribute their time and services for these clinics.

A series of Tuberculosis Clinics was held under the auspices of the County Medical Society as follows: at Winchester on June 4th; at Ford on June 5th; at Kiddville on June 6th, and at Trapp on June 7th. Dr. J. S. Lock, of the Bureau of Tuberculosis, State Board of Health, and Dr. Bates of the State Tuberculosis Sanatorium, assisted by the members of the Society in these various localities, making the examinations.

I desire to take this opportunity to express, on behalf of the Clark County Medical Society, our appreciation and thanks to our Councilor, Dr. Julian Estill, for his regular attendance at our meetings and for his valued assistance during the year.

Cumberland County Medical Society

W. C. KEEN, Burkesville: Mr. President and Delegates: We have only six members in our Medical Society. We have seven, but there is one that is away. Four of us live in town and two in the country. On account of there being so few of us and on the grounds that occasionally the roads are bad and the water is high, we don't meet regularly, but we do occasionally meet. I am sorry to say that I fail very frequently to send the reports to the State Secretary.

We have two men in our county that are entitled to membership that are not members for reasons best known to themselves. We have one chiropractor down there. We have him indicted now four times. His trial will come up in November. I don't know what the result will be. I suppose it will be just like it is in all the other counties: if the jury happens to favor chiropractors, they will acquit him. If the jury wants to abide by the law instead of favoring what they would like to favor, they will finally convict him. If they clear him again this time, we will go after him again.

I am going to try to get the other two men who are entitled to membership. I tried to get them up here, and if I had succeeded in

that I would have gotten them in. Where there are such a few men there are always old men, except myself. There is but one doctor in our county under fifty years old, consequently we don't get about like the young men. I notice the delegates from counties where they have railroad facilities and there are quite a number of physicians and they are making good reports. I can't make as good a report as I would like to from the fact that there are just a few of us away off down in the corner, but I want to say again for the benefit of some of the members that may have accumulated money practicing medicine, if such a thing is ever done, that we have an oil field down there and we oil our roads and we will make a great place for you to invest your money, if you will come down. (Applause).

Daviess County Medical Society

W. L. TYLER, Curdsville: The Daviess County Medical Society claims as its members in our county all the reputable members of the medical profession. We have regular meetings, well attended, and there is the very best relation among the membership and profession. Everything seems to be fairly harmonious. Things are going along nicely in our county. We have increased our membership due to the fact that the population of doctors has just recently increased in our county.

Fayette County Medical Society

S. B. MARKS, Lexington: Fayette County has an active Society membership of eighty-five, a gain of five over the past year. We, of course, have a regular monthly meeting. There are a good many doctors in town who are not members of the Society; all who are eligible to membership are earnestly besought to join, but I have never yet succeeded in getting the men from the asylum and the Veterans Bureau to join up full strength. I don't know why they don't like us.

We lost one member by expulsion for violation of the Harrison Act and there were two other men in the Society who are also indicted. One was fined $5,000 and the other was indicted and given a sentence to a term in the Federal Prison. Neither of the men were members, though, of the Society. We boast now in Fayette County of an all time health officer, who is also an all time venereal officer. He is a very valuable man to us, he is doing wonderful work and we are proud of him. At a recent meeting of the Kiwanis Club, I had the program and I asked Dr. Linwood Brown, Chief of the Laboratory of the experiment station, to appear and give a brief resume of their work. The club was very much impressed and pleased with the work of these gentlemen and I don't believe anything could be more valuable to any bunch of business men and clubs than reports on public health work that is being done in the several communities.

Fleming County Medical Society

B. J. O'BANNON, Flemingsburg: We have fifteen members in good standing. We have had eleven meetings during the past year, two original papers read, four original discussions opened by appointees. We had eighteen case reports. The actual attendance during the year was ninety-six, an average of 8 6|11 at each meeting. The interest in the Society has never been so good as during the past year.

We have in the county three retired physicians, one homeopathic physician who is not a member of our Society, two registered chiropractors, one a resident and one who has two hours for office work here daily while residing at Maysville.

Garrard County Medical Society

J. B. KINNAIRD, Lancaster: The Garrard County Society was in existence several years before the Kentucky State Association was formed, and from its inception up to this time every white reputable physician has been a member. We have always had a small society on account of a limited territory—never over twelve members at one time. At the present time we have only eight. In the last two years we have lost two members: one retired on account of old age and another on account of poor health, making only eight members.

We have meetings now and then, not exactly as we should but at any time we can get a meeting of our doctors, because the large majority of them live in town. During the last year we met twice at Crab Orchard Springs trying to form a Tri-Medical Society composed of Lincoln, Garrard and Rockcastle counties. It is very difficult to get Rockcastle doctors to come. We have been trying to get them into the fold.

Our members co-operate in every good work as Dr. Lock will tell you, when we held the clinic. Dr. Lock and Dr. Bates held a clinic in July of this year. Every doctor in the county brought cases or if they didn't bring cases they assisted them in their work. He will tell you that they are all enthusiastic and all well qualified and are good men.

The only thing I regret is that we can't get them together more often. I have been secretary of the Society from time immemorial and it is the most difficult thing in the world to get all the doctors together at one time. There is only one way to do it suc-

cessfully and that is to give them a supper. Every time we give a supper we can always get a good crowd to be there. I hope we will do better in the future as we have a lot of new blood and young fellows, and I think we are going to have a better Society than ever.

We find the same difficulty with the chiropractor that Mr. Beckham spoke of. In localities it is a hard thing to get doctors to prosecute a quack from the fact that they always get in with the county officials. In my county this chiropractor has formed a friendship of the officers and has been treating some of the officers' children and it would be a difficult thing to prosecute him. I have always been afraid to bring suit or have him indicted because we might have the same experience as in Lincoln County. We had proof against a man that he had no diploma, no license to practice chiropractics and the jury freed him. But we are going to get rid of him.

Harlan County Medical Society

E. M. HOWARD, Harlan: The number of doctors has increased so rapidly in Harlan County that it is quite difficult to keep up with the number. In the last report there were fifty-four doctors in Harlan, all of whom belonged to the County and State Medical Society. We have regular meetings, but owing to the location of the outlying districts, it is hard to have a very large attendance at each meeting, but I would say twenty-five per cent are there regularly. The others come occasionally.

Harrison County Medical Society

N. W. MOORE, Cynthiana: The membership has been reduced in the last year by four members. We lost one by death, one by nonpayment of dues and two were expelled. We have thirteen meetings and thirty-five clinical cases reported and discussed. We have had meetings every month for twenty years. I think we have never missed a meeting in that time.

The last year the attendance was 9 3|10. We have six doctors in the county who are not members, and I think I am safe in saying that three of them will soon be members. The others are not active enough to come into the Society.

Grayson County Medical Society

B. C. WILSON, Clarkson: The Grayson County medical society has held two meetings this year with interesting programs and fair attendance. Our organization in this county is in good shape and harmonious. Our county is adequately supplied with doctors evenly distributed. We have sixteen active men doing general practice, one eye, ear, nose, and throat man, one osteopath, one quack and no chiropractors.

Our county medical society, the county health and welfare league, local Red Cross chapters, fiscal court, and private citizens have been favorably impressed with the cooperation and helpful attitude of the State Board of Health toward our county, in supplying us with a county nurse, furnishing the doctors with ample supply of typhoid vaccine for a typhoid vaccination campaign, and making it possible for us to hold tubercular and trachoma clinics in the county this year.

All of these benefits have been passed along to our people in the prevention of illness, saving the time and money to our taxpayers, and the lessening of the number of deaths from preventive disease. The Grayson County Medical Society stands as a unit in upholding the hands of the present personnel of the State Board of Health and the officers of the State Medical Association, and in opposition to any movement fostered by selfish interests calculated to bring about discord or disrupt the present efficient status of our State Organization.

Hopkins County Medical Society

A. W. DAVIS, Morton's Gap: Hopkins County Society is fairly active, you can't say it is very active. We have a meeting each month. I think the doctors in Hopkins County are too well satisfied with each other and the way they are doing to get together very well. There is no jealousy. We have twenty-eight members, having lost one last year by death.

I can't say that we are active but we are not inactive. I think, in fact I know, every physician in the county is in active practice and I believe they all belong to the Society. We feel that we need just a little bit of pep put into us and need to have a little bit of stimulation. We get together but we just talk it over, we don't discuss it very much.

Jackson County Medical Society

W. B. HORNSBY, McKee: I happen to be from one of the counties in the eleventh district. We have five active general practitioners in Jackson County. Each and every one of us belong to the Kentucky State Medical Association and to the Jackson County Medical Association, we did when we met but we haven't met since I have been in Jackson County. I tried to get them to meet but they wouldn't do it. We have a hospital in Jackson County which will accommodate thirty or forty patients if crowded just a little. Unfortunately so far that hospital has not been a paying proposition. We have nurses furnished by the Board and one doctor furnished

by the Board. This doctor happens to be a lady doctor now and is not taking with our people so very much yet but I hope she will later on.

Owing to our road conditions in Jackson County it is very, very hard to get around. If you make one trip of sixteen miles in a day you are doing very well. As a rule you hit mud up to a horse's belly, as the old saying is, and you have got to go horseback to there or walk if you choose. We generally go horseback. Taking it altogether, Jackson County is a large county with very few doctors and I don't know how they are going to get any more. Some day maybe God will see a way to send doctors in there. We have tried three or four nurses in the county and we do need a county health nurse, but we are not going to get one right now. Outside of that I think Jackson County is still on the map.

Jefferson County Medical Society

IRVIN ABELL, Louisville: I don't know that I am in position to give you the number of members in the Jefferson County Society. We are active as usual. We have our usual meetings with outside parties invited and men of distinction invited occasionally to lend benefit to our meetings. The membership is three hundred and twenty-seven.

Knox County Medical Society

F. R. BURTON, Barbourville: Knox County under the leadership of Dr. B. B. Jones as President is a very active organization. We meet the fourth Friday night in each month. We have a little hospital there with eighteen beds and we always meet in that hospital. We have two original papers at each meeting besides discussions, and Dr. Logan always has some clinical material in his hospital. We have thirteen doctors in the county all of them members of the County and State Medical Association. We have a very efficient, or have had, public health nurse. She got away from us recently, but we are going to get another one.

In keeping with the custom there our October meeting will be a public health meeting. At that meeting we will invite the county board of education, all the ministers and lawyers and whoever cares to attend, and they will discuss with us the general problems of the county. This is Dr. Lock's home town, if you remember, and we claim it is the best medical society in the district.

LaRue County Medical Society

T. J. POTEET, Hodgenville: We have nine members all of which are members of the State Medical Association. We lost one member by death in the past year.

Lincoln County Medical Society

M. M. PHILLIPS, Crab Orchard: We are glad to report Lincoln County Medical Society in a very prosperous condition. Our meetings are held regularly and at each meeting some member of the Society reads a paper on some subject of interest. The doctors of the county are all working in harmony. We have seventeen active members and five non-members, which we propose to get next year.

McCracken County Medical Society

C. H. LYNN, Paducah: I am sorry Dr. Reddick, the other delegate of our Society, is not here to give you a detailed report, but we have a very active Society. We have our meetings twice a month except two months during the summer, when we meet out in various parts of the country. We have, I think, three more members this year than we had last year, which brings us up to within one of having a complete membership of all the doctors in the county.

At each of these meetings we usually have one, sometimes two, papers. They are actively discussed with the usual case reports. Harmony usually prevails at these meetings. We have never fallen short at any time at any of them.

Marshall County Medical Society

V. A. STILLEY, Benton: Our Society hasn't been as active this year as it has been on other occasions owing to the fact of removal of our secretary from the county. Most of the physicians that are active in the county are members of the County and State Society. There is a good spirit of fellowship among them and they are pretty active men.

Hardin County Medical Society

J. M. ENGLISH, Elizabethtown: Hardin County has twenty-five eligible doctors. We have twenty-three members in the Hardin County Society. We meet the second Thursday in each month and we always have a quorum. We get along amiably with each other. They are a fine bunch of men and we would be glad to have any of you come to meet with us.

Pulaski County Medical Society

CARL NORFLEET, Somerset: The Pulaski County Medical Society has shown more interest in Society work this year than it has in the past few years. We have a membership of eighteen. There are twenty-six doctors in the county two of whom are colored. We have two men practicing medicine who are non-graduates. Three chiropractors have made their appearance and claim to be quite busy.

One of our members has installed an Abrams Outfit and is enjoying quite a large patronage, according to reports.

We have enjoyed a few very interesting papers this year from members of our Society and a large number of interesting cases have been reported.

Through the efforts of the Pulaski County Medical Society a very successful tuberculosis clinic was held in the county last May; Drs. Bates and Lock rendered invaluable services during a five-day campaign. At these clinics over 200 were examined and 27% of which were found positive or strong suspects.

Pulaski is hoping to secure the services of a Public Health Nurse in the near future.

The Pulaski County Medical Society desires to endorse the present organization of the Kentucky State Medical Association and offers its support in all matters pertaining to progressive medicine.

Todd County Medical Society

C. M. GOWER, Trenton: I really am ashamed to report for our county. Years ago we used to think that we had one of the very best small societies in the state, but in recent years from some cause or other it is not nearly as active or nearly as efficient as it should be. I think possibly it is due to the fact that all the doctors have all the work they care to do, and they are too contented and too inclined to sit still and see the world go by, but I have hopes and we have hopes that Dr. Blackburn's Third District Organization will help us out and we shall try to change our monthly meetings to semi-monthly meetings and alternate with his every other month in a meeting of the Third District Society.

We have the very best of feeling and I think every doctor is on good terms with the other. There is no trouble along that line. We hope in another year to make a better report.

Warren-Edmonson County Medical Society

J. H. BLACKBURN, Bowling Green: Our remarks from the different delegates to the effect that the county societies were meeting regularly reminds me of a patient that I attended. In inquiring as to her bowel movements she said they moved regularly every eight or nine days.

Warren County meets regularly, and we are having fairly good attendance. I am unable in the absence of our delegates or the secretary to give figures regarding the members or the non-members. I want to say that some of our non-members are non-members for reasons. I might say that in one instance it is inefficiency, and in another it is inelegance, or something of that kind.

As to our chiropractors, they come and go. Frankly we are letting them alone because we are getting the ebb and flow as it comes from the chiropractor and osteopath and the homeopath. They go over for a while but they come back. Some one suggested that if we let the chiropractors alone it will be just a question of time until he hangs himself by the spine.

As to the other activities of our society, we have within the last year on two occasions had public meetings particularly dealing with the cancer problem. Those public meetings in my mind have been very, very helpful. I might say at least they have been somewhat remunerative.

Mason County Medical Society

W. E. HORD, Maysville: I will say we have twenty-five physicians in the county, fourteen of whom reside in Maysville and eleven in the county. We have, I believe, fifteen active members, two health nurses, a city nurse and a county nurse, two chiropractors, two osteopaths, and we have the money raised to build a $150,000 hospital.

Laurel County Medical Society

G. S. BROCK, London: I think Laurel County is one of the best societies in the state. We meet every year and sometimes we meet between times. As Dr. Lock has indicated our eligible doctors are members of our society. Our road conditions make it impossible for some members to attend regularly. We have some good meetings once in a while. The majority of our members live in town and they gather quite frequently. We are building a new hospital in London which will accommodate forty patients. We hope to have it completed by spring.

Rockcastle County Medical Society

A. G. LOVELL, Mt. Vernon: We have ten doctors in our county. We lost one recently, however, by death, a young man who was very promising. We have a whole time county nurse at this time who is doing a great deal of good work. We belong to that string of counties that are trying for prizes along certain lines, and the health department especially is doing its utmost in that particular work. All of our physicians don't belong to the county society but they are, however, co-operating with us in any health problem that we may have. We feel that our county now is in better condition than probably it has ever been before, and the outlook is very good for improvement.

Woodford County Medical Society

C. F. VOIGT, Midway: Since the last meeting of the Kentucky State Medical Association there has not been an official meeting of the County Society held. It seems that the organization of the doctors of Woodford County is impossible.

There are at present in the county fourteen white and two colored physicians in active practice. Versailles, the county seat, has one chiropractor and there is another opening an office in Midway at present.

In the past few weeks the child health conferences have been established in Versailles, meetings to be held monthly, and a third conference is being established in Midway this week.

Woodford county physicians have the honor of having one of their number nominated for Representative in the recent democratic primary, Dr. A. S. Blackburn. His election is assured since there is no candidate on the opposing ticket.

Health conditions on a whole have been excellent during the summer. Typhoid fever seems to be about wiped out of the county, there having been only four or five cases in the Versailles end of the county and not one in the Midway section.

THE PRESIDENT: The next item on the program is the report of the Medico-Legal Committee. As Dr. Moren is not present, the Secretary will read the report.

Report Of The Medico-Legal Committee

THE SECRETARY: In 1922 a total of 162 cases were reported. During the past year 15 cases have been brought to the attention of the committee, making a total of 177 cases brought before the committee since 1908.

During the past year 10 cases have been disposed of, the majority going to Court, and were either won or dismissed by peremptory instructions. One trial resulted in a verdict of $100 against the defendant.

The case reported last year with a verdict of $2500 against the defendant was compromised after the trial by the physician for $700.

We have on file 15 cases. In other words out of 177 cases only 15 remain to be disposed of; 6 of these are from one to five years old, and I am inclined to believe that they will be dismissed, as they are not particularly worthy. Of the nine remaining cases reported in 1923, there are several that may prove to be very troublesome, and require diligence on the part of all concerned, but from the evidence I have it seems that none will prove particularly dangerous.

Concerning the type of suits. They are running about as usual. In 1923 there were six fracture cases, two foreign bodies in field of operation, one operation without consent, one death from choloform, one gas bacillus infection, one error in diagnosis, one attempted suicide and one obstetrical.

The committee wishes to call your attention to the increased number of suits brought in the past year. In 1921 there were five cases. In 1922, nine cases and in 1923, fifteen cases.

I have no explanation for the increased suits, neither have I any evidence to suspect that they are prompted by remarks of other physicians. It must be one of those signs of the times. As to the conduct of the physicians connected with these cases I have nothing but commendation and praise. Each fellow, as far as I know, has done his duty.

I feel that the important thing for the doctor to remember, especially from the increased number of suits in the past year, is for him to do his best, to be on the alert, take no chances, and seek consultation more frequently.

In this connection I would like to call the attention of the Association to the necessity for men sued for malpractice to immediately report to Dr. Moren and Mr. Forcht, our attorney, so that the attorney may be employed with their knowledge and consent before the event.

The Society has been mulcted for utterly outrageous fees in two or three cases in the last few years. They have been entriely beyond reason because of neglect of this necessary report. The Medical Committee has instructed me to notify every doctors in the state and that letter is prepared and will go out as soon as this meeting is over, that hereafter no employment of an attorney will be recognized unless it is done with the consent of Dr. Moren and Mr. Forcht. This is a necessary move to protect us from the disposition of our funds in a wholly unworthy manner and in a few instances it has been in a way to indicate a kind of collusion that is very reprehensible and very dangerous to our resources.

THE PRESIDENT: The next order of business is the report of the committee of the Journal as well as the editor's and manager's department. The discussion of the Journal will be postponed until tomorrow evening on account of the absence of Dr. Zimmerman. I also believe it would be advisable, Dr. Stilley, to postpone your report. With your consent we will do that. Is there any miscellaneous business to come before the house of delegates? If not we will adjourn. The meeting adjourned at four-thirty o'clock.

September 17—Second Meeting Of The House Of Delegates

The second session of the House of Delegates was called to order at eight o'clock p. m. by the President, Louis Frank.

THE PRESIDENT: The House of Delegates will come to order.

J. A. STUCKY, Lexington: Mr. President, I desire to make a motion that it is the wish of the Kentucky Medical Association that the legislature pass laws compelling the manufacturers or at least the sellers of concentrated lye to place upon every package that is sold a poison label with one or two anti-dotes, the printing of "Poison" on this label to be in large letters, as large as the letters used to tell what it is. On account of a number of cases of stricture of the esophagus that we are seeing, many of them hopeless or requiring very radical surgical procedures, this is becoming a menace. Anybody can go to a drug store or a grocery store and buy a can of concentrated lye, a very deadly and dangerous poison, without any question being asked.

Pennsylvania has asked that such a law be passed, and accomplished it, also several other states, and I move you that it is the wish of the Kentucky State Medical Society that such a law be enacted in this state.

The motion was seconded and unanimously carried.

J. A. STUCKY: Last year I reported having examined all of the inmates of the insane asylum as to the eye, ear, nose and throat condition. That report has been published in the Journal. I have just finished an examination of the inmates of the reform school and have found a very interesting condition of affairs there. I also demonstrated in a number of cases that there is a physical basis for some of the criminal or incorrigible tendencies of the ten, twelve and fourteen year old children who are sent there.

There is no provision that has been made for any eye, ear, nose or throat special attention to these inmates. That report will be handed to the editor in full in a few days and it will be published. I think it is high time, gentlemen, that Kentucky get into the forefront. We had one of the first institutions for the insane in this country in Lexington, and something ought to be done for the mentally crippled or morally crippled, and medicine should do more and the medical profession should do more and get more than they are now getting in that line.

I simply want to call that to your attention and let you think about it, and I sincerely hope some active steps will be taken in behalf of these unfortunates.

THE PRESIDENT: We will pass back to the reports of the Councilors again. I believe the Fifth District, Dr. Hoffman, has not reported.

Report Of Councilor Of The Fifth District

C. G. HOFFMAN, Louisville: My report is very short. I wish to apologize for not making it this afternoon, but I was attending a sectional meeting.

I have been inactive, in a way, during the past year. I only attended one County meeting, and that was in Boone County. I think that was the first county meeting that they had had for three or four years. I had been trying to get them together to have a meeting so we could come to visit them for two or three years at least, and finally I was successful this year. We had a very delightful meeting. We were met by Dr. Rrankin, who is one of the delegates here, and they reorganized and elected officers and delegates.

The reason for my being inactive is this: the counties in my district are suffering from the same thing I suppose every district is suffering from. There are not over two or three men in some of the counties, and it is no incentive for them to have a meeting. Two or three men don't care to meet together and talk over their work, as they think they don't get very much out of it. There are little petty jealousies among some of them; they don't like what John is doing or what Dr. So-and-so is doing; consequently they are not meeting at all. They are not doing any joint active work. It has come to pass where we have to do something about this. I am in accord with the remarks of Dr. Frank this morning when he suggested that we have District meetings, Councilor District meetings with the men of the combined counties meeting at some place during the year, with a program that will be interesting. That will bring the men together better and they will naturally be interested in a program that will be beneficial to them. This thing has been talked over before, and I don't see why it can't be brought about. I suppose it will have to be taken up with the House of Delegates, but I think that is the only solution to this, having these counties doing some active work, and that can only be done by combining the counties of one district and having district meetings at certain appointed times at certain places with special programs.

THE SECRETARY: I want to take this opportunity of discussing the report of the Councilors, and I hope the Delegates will all feel that is one of the things that is before us for discussion. It must be remembered that the activity of the individual members of the

Council from the beginning, that is the past twenty-five years, must be taken into consideration in the work of the Councilor. The Councilor is the Bishop of his District in medical service, the center of the organization. Upon his activity and his definite activity in each county depends to a very considerable degree the pressure of medical activity in that county. That doesn't mean that the Councilor takes the responsibility for local action; he doesn't do that at all, but he carries into the county the inspiration and the incentive and helps to remove the obstacles to the smooth functioning of the society whenever it fails to function.

The difficulty that has arisen in the county societies of the state, in so far as difficulty has arisen, and fortunately it hasn't in many counties, is that during the war we lost step in many counties. It is important to remember that nearly ninety of our counties are now having good meetings, not regular meetings according to Dr. Blackburn's definition this afternoon, but good meetings. They are having real meetings, they are really functioning and really working.

The treatment of a diseased county society is like the treatment of a diseased man. If you can get him when he is first starting it is easy to cure him. If you wait until he is dead it is awfully difficult to do anything but have an autopsy and come here at the end of the year and offer explanations as to why he died. It is hard to get a county society working, I know. The important thing for the Councilors to do (and I speak of them with a wonderful degree of affection and esteem because in the state of Kentucky the work of our Councilors for the past twenty-five years has been the outstanding thing in medical organization) is to get into effect a combination of the suggestions that Dr. Aud and Dr. Kincaid have made here from year to year, that the men in the county must realize that the Councilor is always ready to come and call on them when they need him, and that the Councilor must realize that he doesn't have to be called on, but just know that when anything starts wrong he is expected to get there and recognize it, just like the doctor is, and if both sides are working in that way the Councilor is bound to get there in time to do the job.

I am satisfied from close observation that I have given to the subject that it has cost every man who has been on the Council of the State Medical Society at least $100 a month during the entire time he served in actual money to be a Councilor of this Society, and yet I don't think any one of them has ever stopped to consider that for a moment. Our Councilors have attended the local meetings, they have attended them whenever anybody in the county felt that something was developing that ought to be corrected.

The President's suggestion of the organization of a District Society is all right in a good District, but in a District such as Dr. Hoffman's where the county societies, or at least many of them, are decadent, where they are not doing anything, the organization of a District Society would kill every one of those already nearly dead societies and they never would function any more. In a District like Dr. Richmond's, the First District, where for many years they have had an excellent functioning District, it is strong because every county society in the District is a strong one and the men go to their District Society in Southwestern Kentucky because they have strong societies at home that make them feel the need of a strong District Society.

In Southern Kentucky in the old Southern Kentucky Medical Association, before the reorganization, we had a strong District Society. It didn't do any good at all as compared with the county societies, and without the county societies it would do positive harm in the development of professional interests, because the men who attend a District Society without the stimulation of a county society are the best men, they are already good men. The men that need constant attention are the men that don't attend the county societies, and the county society ought to so function that it compels their attendance by the character of the interest that is developed in the county society. It is the men who are not active in their work that we need to get to.

There is no difference between the big society with three hundred members and the little society with three or four members in point of responsibility and opportunity. In the Jefferson County Society we have the largest number of non-members of any county in the state. It is because we don't so carry on our work in the Jefferson County Medical Society as to attract the submerged element and make them progressive members of the most progressive profession in the world. That is true in the smallest as well as the biggest society, and no society is a success until it so conducts itself that it makes its program so attractive that the members feel the necessity of attending.

Another point of view must be taken in regard to the matter. We are teaching now in all the schools of Kentucky health education. Thirty minutes of every day is devoted to that subject. In most schools that doesn't mean anything because the teacher doesn't know anything to teach, but wherever the teacher has been properly taught and trained and is teaching health education as provided

in the manual, they are teaching the children of the state to ask their physicians if they are members of the Medical Society and attended the last meeting, and if they say they are too busy to attend and are not members, they get another doctor. Such men are dangerous or are going backwards. They belong to that submerged element in the profession that reads no magazines, no books, has no forward view-point and doesn't get anywhere.

I hope the time will very rapidly come within every district in the state when we can have a District Medical Society. We already have them organized. One has been organized in Dr. Kincaid's District this year. The Kentucky Midland performs that function for a portion of Dr. Estill's District and the Kentucky Valley for another portion. Dr. Lock's District is in splendid condition for the organization of a District Society because they have every man in attendance and every society in the District is functioning except in Jackson, which has a perfectly legitimate excuse for not functioning; there are only five doctors there and it takes them too long to get together due to the scattered areas and the poor means of transportation. In the other counties of that District they are functioning, they are meeting regularly and they are in position to have well attended meetings two or three times a year at any one of the central towns in that District.

I hope in the development of the Councilor District Societies they will only be developed when in every single county in the District where it will ever be possible to have a functioning society there is one before the District Society is organized. If that isn't the case it will be the same failure that we had before the reorganization, because the very success of our whole movement (and it is important that we remember the principle of it) is the fact that it is democratic, it is to get every single medical citizen interested in medical affairs; that is the purpose of the organization, and in so far as we fail to get every single one of them we fail to do the thing for which we are building our organization.

I hope very much that in the development of our plan for the future we will consider the very foundation of our whole organization, the successful county society, and we will only begin to develop other organizations after all the county societies in that District are functioning.

More work has been done by the Councilors this year than any year since the war—more work than any year since 1912, and a great deal more work has been done by the county societies than in any year since 1907. The societies are carrying out the best programs. It is worth while to come by the office and look over the files of the JOURNAL and read the difference in the character of the papers that the members of the county societies are sending today to the JOURNAL compared with the articles that went in ten or twelve or fourteen years ago, remembering and understanding all the time that the JOURNAL is like a Rotary Club, it is a cross-section of the profession of the state. It doesn't contain only scientific articles. It contained some very rotten ones in the issue before the last, by the way. I think probably we had one of the worst articles every published in the JOURNAL since it has been published. It was a reflection on the society from which it came, yet it is published because the Society sent it in.

In the beginning we had comparatively few articles of real scientific value and most of them were read before this meeting. At the present time our JOURNAL compares favorably with those which use the most careful and severe selective process in selecting the articles which they publish. I don't think there are many JOURNALS that are publishing articles of more intense practical scientific interest. That can be continued just as long as we have good functioning county societies and not a day beyond that. As soon as we should begin to develop a lack of interest on the part of our functioning societies, that would stop.

The old aristocracy that existed when this Society met here under one of the most intense and interesting conditions that ever arose in the profession, when matters were at a crisis just as they are at a crisis now in professional affairs, has passed. The intense interest that developed all over the state in that meeting of this Society years ago attracted the attendance of about seventy-five members where now today we have in this House of Delegates one hundred and fifty men present, and will have between 500 and 600 at the meeting. The difference is because the members of the Society are interested in the details of its affairs, and we can only hope to succeed as long as we constantly increase that interest and make it known to every member of the medical profession, however far away he is from a medical center, however few doctors there are in his county, that we are functioning for him and that we will carry our whole work into his county regardless of how few doctors there are there, because in the smallest county we must have the light of medical education and medical progress and public health if we are going to function as a great organization.

I wish the delegates from the various counties would discuss the work of the Councilors, because I know the Councilors would like to

have them discuss it with a view to helpful, constructive consideration of their policies and their problems, so that the Councilors may know how they can be more helpful in any place in which they are not doing their maximum of usefulness now.

W. W. RICHMOND, Clinton: I would like to say that we have in Southwest Kentucky an independent organization known as the Southwestern Kentucky Medical Society fifty or more years old, meeting every year. It is largely composed of the thirteen counties of that District. That is perhaps the strongest medical society connected with the state association. It meets semi-annually at some place in the District, and the annual meeting is held every year at Paducah. It has done great work. It is still doing great work and it will likely last as long as this State Association lasts. It is over a half century old and is stronger today than it ever was. While some might be opposed to connecting it with the State organization, that is all it needs to make it just exactly what we want. If it could be brought under the State Association it would be a model society and the kind of an organization that Dr. McCormack speaks of.

THE PRESIDENT: Is there any further discussion on the Councilors' reports? If there is no further discussion, we will have next the report of Dr. Julian Estill, Chairman of the Committee on Scientific and Commercial Exhibits.

R. JULIAN ESTILL, Lexington: Mr. President, I have no formal report at all to make except to call the attention of the House of Delegates to the exhibits, both scientific and commercial, in the lobby of the hotel. I wish to call particular attention to the exhibit of Dr. Veech in infant welfare and prenatal work, particularly welfare work. It will amply pay you to see the information she is giving to mothers in the care of their children. She was recently in Lexington during the county fair had a booth on the grounds, and every afternoon during the County Fair examinations of children were made. Great numbers of children were brought in there at that time. Literature was given to them which is interesting both to the mothers and to the doctors. I am sure it will be interesting for you to see just what she is doing.

The exhibit of the electrocardiogram is an intensely interesting exhibit and would be well worth your while.

THE PRESIDENT: If Dr. Reynolds is not here, we will go to the report of the Committee on Control of Cancer, by Dr. Irvin Lindenberger.

IRVIN LINDENBERGER, Louisville: This Committee, or part of it, is here, and I thought it would be a better plan for us to report back to the Society at a later session after we have had our committee meeting.

THE PRESIDENT: Is there anything else to come up before the House of Delegates at this session? Is there any new business to come before the House of Delegates? Are there any resolutions, motions, or anything of that character to be brought before the House?

If not, we will adjourn to meet promptly at eight o'clock tomorrow morning, the session adjourned at eight-thirty P. M.

September 18—Third Meeting Of The House Of Delegates

The third session of the House of Delegates was called to order at eight-thirty A. M., by Vice-President Dr. W. Barnett Owen.

THE CHAIRMAN: The House of Delegates will please come to order.

Dr. Lindenberger's report which should have been presented yesterday will be presented now.

Report Of Committee On Control Of Cancer

IRVIN LINDENBERGER, Louisville: Gentlemen: I have no formal report. I am down here as Chairman of two committees, one on the Control of Cancer, and the other one on Systematic Physical Examinations.

I thought it would be well possibly to outline what we have done regarding the Cancer Committee. Several years ago for some reason unknown to myself I was appointed Chairman for the state of the American Cancer Society. I organized three districts, Eastern, Middle and Western portion. Our late Dr. Barrow was Chairman of the Eastern District, Dr. Irvin Abell of the Central District and Dr. Blackburn of Bowling Green of the Western District.

Every year we have a so-called cancer week and the activities of the Society and of the various committees of the state are supposed to be more marked at that time than at any other. Propaganda in the way of talks have been given before various clubs, notably the women's clubs of various sections; through Dr. McCormack a film was purchased called "The Reward of Courage" and that was shown in Louisville during cancer week.

Our activities last year I don't think were as marked as they should have been. However, Dr. Abell has done most splendid work in the central section of the state. In Louisville he has talked I suppose before six to ten various organizations and very lately at Bowling Green gave a cancer talk before twelve hundred normal students. This lecture was so well appreciated that they didn't want the

doctor to stop. I am told you could have heard a pin drop; the interest shown at this meeting was something great.

Unfortunately, the members of the Committee are not all here. Tentatively we had in mind for this coming cancer week and during the coming year to circularize the state, which has already been done, however, but through the women's clubs see whether you gentlemen through your county societies can't get to these organizations, so as to better control this disease.

The other committee, of which Dr. Woodard is a member, is the Systematic Physical Examination. As you may know, the Life Extension Institute of New York City, an organization that gives to many policyholders and insurance companies the benefit of periodic health examination, does it because it is a monetary matter with them. They find the longer they pay for these examinations the longer the individual pays by prolonging his life on the premium account.

The National Health Council of New York City through Dr. McCormack have recently gotten out some posters. These posters, as you notice, request every one to have a health examination on their birthday.

At a meeting of this committee it was the sense that every county society in the state expend two dollars and for that two dollars these circulars will be purchased; I suggested myself, and through Dr. McCormack and the State Board of Health, especially through the Bureau of Public Health Nursing, with their seventy-two nurses, with their county health officers, they will be distributed over the state and talked up so that the people of the community will come to the doctor.

The question arises about blanks for these periodic health examinations. The American Medical Association, through Dr. Haven Emerson, have gotten up a form for these periods examinations. In the April issue of the JOURNAL, I wrote an article suggesting a form. These forms can be purchased at Chicago, that is the American Medical Association, or by referring to the JOURNAL of April you can notice the form that I got up. My form is taken in part from the form of the Life Extension Institute of New York City. This work, both in the control of cancer and in the periodic health examination, is going to become more active, it has been active and should be brought to the attention of all the members of the profession because it is the only way that we will help save life rather than wait until we see the suffering and pain and disease.

THE SECRETARY: In moving the adoption of the joint report of these two committees, I would like to emphasize the importance of this campaign for the systematic examination of the well. It is a matter about which frankly we doctors haven't thought much. Busy in our general practice with people who are already sick, we haven't formed our thoughts much along the idea of examining well people, and yet during the war when we came in contact with the examination of enormous numbers of apparently well people, a third of them were found with such defects that they were unable to carry on in the army. Half of those conditions that were found were preventable and the other half in addition to many of those that were preventable were correctable.

You can readily see what the economic advantage to the nation would be if there were systematic examination of every individual annually with a view to the prevention of the development of defects and the correction of such defects at the time they were first correctable.

The National Health Council, on which I have the honor of representing the Conference of State and Provincial Health Authorities of North America, has been considering for the last five or six years a plan for popularizing the systematic examination of the well. It is a curious thing that of the great national agencies composing that body, the only one that was doubtful about the expediency of the proposition was the American Medical Association and its representative was doubtful about it because he was doubtful about the qualification of the medical profession of America to make a systematic examination. It was only after five different years that the attempt was finally successful because any one member can veto any national campaign.

I am satisfied that in Kentucky any of our physicians who are interested in the matter can make these examinations as successfully as they need to be made. I recently had an example of the wrong way to do the thing. A woman from Bowling Green came into my office to find a doctor who would examine her. She had gone to a doctor in Bowling Green to be examined and he said there wasn't anything the matter with her. He said, "I see you every day and you are all right and there is nothing wrong with you at all." That was evidently the wrong way. Then she came to Louisville and she was examined by eleven men, and that was just as wrong for a woman that had very little the matter with her. She did have something the matter and it was entirely correctable and the first man that made any general examination discovered it and was the man who relieved it. There wasn't any reason for her going to the other men in her condition at all.

The systematic examination that is made very expensive doesn't give the right attitude toward the profession. There ought to be a reasonable fee for it but there ought to be fee. If the examination is not made well, you don't charge for it. The doctors of the State as a rule will have people come to them and ask them for a little medical attention and they give them a little advice and make no charge for it because it is worth nothing, they know it.

Medicine given out with a diagnosis, without an examination, is a reflection on us. A drug store does that same thing and we reflect on the drug store because they do it.

This campaign will be a success and incidentally it will double the income of the medical profession of America if they are ready and willing to go to work and do the job because it means that the sensible, educated people, the only ones to whom it will appeal, will come on or about their birthdays to the doctor's office and there submit to a systematic complete physical examination, and if we are worthy of our job we will put on this campaign in such a way that in a short time the people of America can be supporting us largely for keeping them well instead of paying us largely for treating them with hopeless conditions that ought never to have developed.

I hope very much that the medical profession of Kentucky will respond to the appeal of this Committee and to the National Health Council and the American Medical Association in an enthusiastic way that means real hard labor, because it is lots harder to examine a patient that has very little the matter and find out that little than it is to make a diagnosis of typhoid fever, the absence of a leg or an ear or something of that sort. But it is far better to do it than after the little thing that is the matter has become dangerous.

There ought to be a day set apart where the program will be devoted to examination of the well. Men who examined men in the army, who examined well people, ought to take charge of the program and tell about the systematic examination, discussing this blank and every item on it, and go into the matter in considerable detail. And in case any county society desires it we will be glad to furnish them with some one, some member of the committee, who has taken a special interest in this matter, and if on the day they have their meeting they will arrange for a public meeting and will get the public present, we will be glad to furnish them at any time at the expense of the State Association with speakers for that occasion.

It is important about that matter to, when you are going to have a public meeting, provide your speaker with an audience. It is not fair to ask a man whose time is worth as much as Dr. Lindenberger's or Dr. Abell's or Dr. Woodard's to leave their work and their homes and their families and come down and speak to a dozen of your friends. The doctors of any community in Kentucky that are worth their salt can fill any audience hall in the state.

I went down to Trenton and they had everybody in the whole country around there. They got busy on the telephone, they put men on horseback and in cars and got them out in the country, and they had a wonderful audience. They filled that church absolutely full. We had a regular revival. The spirit of the Lord descended on us with great enthusiasm and we had a wonderful time. We had a lot of the old brethren and sisters saying "Amen" around the corners, and when we got through we had Trenton started to the clean town that it has now become.

If the men are willing to go to work and do the thing, that can be done. I hope very much that the Councilors this year will emphasize this matter of the systematic examination of the well. It is coming just as sure as anything, it has to be done. We might as well get ourselves ready and sort of put on a little reversed English or a new kind of an attachment to our cars because that attachment has to be put on. Cars are going to be run that way and we might as well accept the inevitable; like we Kentucky doctors have a habit of doing when it is inevitable, accept it and do it right.

IRVIN ABELL, Louisville: Just to further amplify what Dr. Lindenberger said about the tentative plans which we have in mind for securing the co-operation of the members of the various women's clubs throughout the state, we have found from our three years' experience in dealing with the subject that they take a much more active and vital interest, thereby getting the information which we wish to convey to a very much larger audience and those who will be particularly interested in it than the medical profession itself does.

It was our idea, if we could secure the co-operation of the doctors in the various counties, they in turn to secure the co-operation of the women's clubs, to have on cancer days or during cancer week a meeting at the chief town in the county—the county seat—which would possibly suffice for two or three counties in that immediate district. If we could in that way secure suitable audiences I am sure we could secure suitable speakers to cover the entire state during cancer week and present to a very much larger number of people personal information, imparted personally, rather than depend upon circularization.

As you all know, the amount of attention which you yourselves pay to circulars that come to your desk is small. Not many of us read them, and that is true of your cancer literature unless it comes to the hands of some one who as the result of having cancer in the family or among some of their acquaintances are particularly interested in it. Others pay little or no attention to it and that much time, effort, literature and money is wasted. If it could be presented in a personal manner, directly, I feel sure in that way we could get the information to those who are most interested and who would be most benefited by it and I personally feel confident that we might attain the object which the American Cancer Society, the American Society for the Control and Prevention of Cancer has set out to do, and that is to reduce the mortality within the next ten years by at least thirty thousand. They have reduced the mortality of tuberculosis through such a campaign over thirty per cent. There is no reason why it should not reach the same reduction of cancer if we can secure the co-operation of the members of this organization.

IRVIN LINDENBERGER: In relation to the Physical Examination Committee, they have a set of thirty lantern slides on this subject which will be sent out to those members of the county societies that wish to use them, and, of course, will be returned. Also a limited number of these sets are available for rental at three dollars for each showing.

THE SECRETARY: I will say that the State Board of Health will purchase immediately two sets of these slides. Any society that arranges for the use of the slides in a moving picture show will have them loaned to them. If any doctor desires to use them in talking to the county society, of course they will be furnished to the county society. We will have them immediately and it won't cost anything except your responsibility for taking care of the slides and seeing they get back unbroken. The society that borrows them will have to assume the responsibility for that because if they don't, we never get them back.

THE CHAIRMAN: If there is no further discussion, do you move the adoption of this report?

THE SECRETARY: I move the adoption of the report. The motion was seconded and carried.

THE CHAIRMAN: The report of the Committee on Hospital Standardization by Dr. Reynolds of Paducah.

Report Of Committee On Hospital Standardization

H. G. REYNOLDS: In making this report I want to plead ignorance of the fact that I was Chairman of the Committee until my return from a three months' European trip about two weeks ago. On my arrival home I found that I had been made the Chairman, so I know you will agree with me that I have had little time in which to prepare this report.

Your Committee has not been very active during the past year, but last year an effort was made to gain some knowledge of the fire protection, fire drills, etc., of the different hospitals, large and small, in the State.

In reply to about ten or twelve inquiries sent out I received only two reports, and one of these was verbal over the telephone. A second attempt was equally fruitless. I should say that if this Committee is to function to advantage an effort should be made to cooperate with the Council on Medical Education of the A. M. A., also with Hospital Standardization of the American College of Surgeons.

These two organizations are prepared, and are willing to give us all the aid possible, and information needed in finding out the weak points, particularly in the smaller institutions of, say, fifty beds and under, and will cooperate with us in strengthening these weak points, if possible.

In my opinion the lack of co-operation of the hospitals, particularly in my district, is due to a mistaken idea that we are not so interested in helping them to remedy any shortcomings in their hospitals, but that we will publish their weaknesses to their detriment.

I want to disabuse their minds, if such is their belief, and assure them that the object of this Committee is constructive criticism and an effort to render whatever aid in our power for improvement.

It might be possible for this Committee to take up the smaller hospitals as a special duty, I mean those that are not in contact with the A. M. A. or the American College, and make an earnest effort to standardize these institutions.

History taking and recording is particularly stressed by the American College, and to my mind no hospital is doing its duty to its patients that does not institute and practice this to the point of supreme efficiency.

Let us briefly review the present hospital situation in Kentucky. There are 119 so-called hospitals in the state, classified according to patients cared for:

Classified according to the Type of Patients Cared for

General	62
Nervous and Mental	10
Tuberculosis	7
Children's Homes*	6
Maternity	1
Aged*	2
Industrial	4
Convalescent and Rest	3
Reformatories*	3
Children's Hospitals	10
Penal*	1
Veterans	1
Eye, Ear, Nose and Throat	3
Deaf*	1
Blind*	2
U. S. Marine	1
Unclassified	2
Total	119

*Hospital Department.

The supply of hospital beds in Kentu ky is as follows:

Hospital Facilities in Kentucky including beds in hospitals and beds for the sick in institutions.

According to reports secured from the hospitals of Kentucky, a total capacity of all hospital beds in the state is 11,197 including 10,860 beds in hospitals proper and 337 hospital beds for the inmates or occupants of institutions that are not primarily for the care of sick but have hospital departments for the inmates.

The 10,860 hospital beds includes 756 beds in federal hospitals within the state, 5,302 beds in state hospitals, and 4,802 beds for local use.

The 337 hospital beds in institutions includes 211 beds in state institutions and 126 beds in local institutions.

Supply of Hospitals Beds in Kentucky:

In 1921, 73.3% of the counties of Kentucky were without any hospitals. In 1923, only 67.5% of the counties were reported as being without hospitals.

Hospitals of less than five beds were not counted in making up these figures. Without doubt, there are small hospitals maintained by doctors, nurses or others that care for the sick in counties that have been counted as not having hospitals.

The hospitals of the state reported in 1921 that 64% of the beds were occupied for the previous fiscal year, while in 1923, they reported only 41% of the beds were occupied for the previous fiscal year.

In 1921, the ratio of beds to population was 653 persons per hospital bed and in 1923, 555 persons.

In respect to the above figures, Kentucky compares favorably with the other South Central States.

In conclusion I want to say that until I began looking into the matter of hospitals in our state I regarded the Hospital Committee of the State Medical Association as a committee looking for a job. After this brief study of the matter I am convinced much can be done if this Committee properly functions. Therefore, I recommend that the Committee either be continued with a view of seeking information and co-operation with the A. M. A. and American College of Surgeons, or with a view of finding out from them where our work is most particularly needed and in what way we can do the greatest amount of good.

THE CHAIRMAN: Is there any discussion on Dr. Reynolds' report?

IRVIN LINDENBERGER: I move the adoption of the report. The motion was seconded and carried.

THE CHAIRMAN: The next is the report of the Committee on Health Problems and Education, Dr. W. L. Tyler.

W. L. TYLER, Curdsville: In view of the fact that the other members of the committee did not get here until yesterday, that report is not complete. I will ask you to wait until a later session to report on it.

THE CHAIRMAN: Next is a report of the Committee on Automobile Insurance, Dr. J. H. Blackburn, of Bowling Green.

J. H. BLACKBURN: I have just been able to talk to Dr. Lukins, who is a member, only a moment ago, and I will be glad to make that report a little later.

THE CHAIRMAN: Any new business?

J. H. BLACKBURN: Mr. President and Gentlemen: I think that if any one in the state of Kentucky is familiar with the condition of Kentucky roads it is the Kentucky doctor. If there is any one who knows personally the discomforts of bad roads and flivvers it is the Kentucky doctor. If there is any one who knows the real tragedies that occur at times as the result of our almost impassable roads, he is the gentleman who knows it thoroughly. It occurs to me that the one real solution for our so-called threatened shortage of doctors in the rural district is to be found in the construction of good roads.

There is a doctor some fourteen miles from me whom I see and meet in consultation rather frequently, a man that I am getting cases from almost every month for operation. During the winter it is almost impossible for him to get his cases into Bowling Green, and I know beyond question that operations have been deferred in a number of instances because of that very fact.

That man is, to my mind, showing good sense to want to get out. He can hardly get out in mid-winter. In the summer the roads are fairly good, but if he moves out from that particular location there is a territory of some eight or ten miles in diameter that will have no physician. In mid-winter those people are going to find it extremely difficult to get a physician from Auburn or Russellville or Bowling Green or Morgantown, the different points about. Those people are not going to have to go through but one or two epidemics of influenza or measles or something of that sort until they are going to build a couple of miles of road that will complete a pike from Auburn out to that particular village. To my certain knowledge, for some seven or eight years a fairly good macadam road has existed to within two miles of this village, and this particular point being right on the county line between Warren, Butler and Logan Counties, of course those fellows down at Russellville, some twenty or twenty-five miles away, are not particularly interested in completing that two miles of road, but I think that sufficient pressure will be brought to bear on those people to lead them to complete that road if it comes about in that manner.

I have been asked to present a resolution favoring good roads and the Good Roads Movement; I shall submit this to the House of Delegates for their discussion, and if they see fit, for approval.

WHEREAS, the lack of an adequate system of hard surfaced highways in Kentucky is proving a most serious obstacle to the progress of education and the development of the business and social life of our Commonwealth, and

WHEREAS, a large part of our profession is peculiarly aware of this deplorable condition because of the tragedy which impassable roads so often visit upon households in rural Kentucky, where emergency medical attention is needed, and

WHEREAS, extension of the system of good roads will go a long way toward relieving the shortage of physicians in certain rural communities from which this state is threatened, and

WHEREAS, the proposed plan of the Kentucky Good Roads Association to finance the completion of our State Primary System by a $50,000,000 bond issue is thoroughly sound and feasible, and

WHEREAS, with all good citizens it is a basic assumption that they would only support such a proposed plan for financing our road system in the event the financial and construction administration of that plan is in the hands of an honest and efficient highway commission, therefore be it

RESOLVED, that this body now endorses the plan to complete by the $50,000,000 State bond issue our primary system of highways, and we now petition and call upon the candidates for governor of both political parties to name as members of the prospective highway commission outstanding citizens who will inspire public confidence in this measure, and we also hereby ask and petition all candidates who will be elected in November to the State Senate and House, and all holdover Senators, to favor, at the next meeting of the General Assembly, a law which will give the people of Kentucky an opportunity to vote at the election of 1924 on the question whether or not the proposed bond issue shall be made to complete the construction of our highway system.

THE CHAIRMAN: You have heard the presentation of the resolution. If somebody will suggest to refer this resolution to the Committee on Public Legislation and Policy, I believe that will be the proper place for it.

IRVIN LINDENBERGER: I move that course be taken, the motion was seconded.

E. G. THOMAS, Benton: Some of our officials in the city of Paducah have had a meeting and they have suggested the idea that all automobile license tax and things of that kind that are paid by a special county tax be retained for the use and benefit of that county. There is a very important reason for that. This general fund can be used and will be used and it seems that it doesn't make any difference where it is used, there is always a place to put it somewhere in the neighborhood of the road commissioners, wherever that may be, and lots of the outlying counties are never known nor heard of. The road and bridge fund of most of the counties in Southwest Kentucky is a little bit short. If we could keep what goes into this general fund at home it should be done. We always have holes to fill and holes to fix and I will guarantee there isn't a county in the state of Kentucky that has paid out more money from their own accumulation than the county of McCracken on roads and got any less benefit publicly for it.

If there is any way on earth to get the point in that each county keep its own road and bridge fund that has been accumulated by automobiles and other things and not let go into a general fund, I hope it can be done, for it matters not where the commissioners are, they look after their own roads.

THE CHAIRMAN: This can be passed to the Committee anyway and referred back for discussion.

There has been a motion that this be referred to the Committee on Public Legislation and Policy, the motion was carried.

THE CHAIRMAN: I believe that winds up the program for this morning. The next session will be held tomorrow night at seven o'clock, the meeting adjourned at nine o'clock.

September 19—Fourth Meeting Of The House Of Delegates

The fourth session of the House of Delegates was called to order at seven o'clock by President Frank Boyd, who was installed into office at the General Session on Tuesday morning, September 18th.

THE PRESIDENT: The first order on the program is the report of the Committee on the Journal.

Report Of Committee On The Journal

B. F. ZIMMERMAN, Louisville: Mr. President, Ladies and Gentlemen: The Committee on the Journal in the first place wants to say that it believes this is the best State Journal that we have had the privilege of seeing, and we have examined quite a number of them in the library at Louisville. The advertisements are all clean, ethical, and the Journal vouches for the integrity of the advertising.

The great bulk of the Journal is made up of scientific papers read by this Society and various county societies, and it lies with the members of this organization as to just how good this feature of the Journal can be made and will be made. It will only be made better when papers are more carefully prepared and when discussions are more carefully edited.

A comparison of the Journal of the last year with numbers of few years ago shows a very remarkable improvement in the character of the scientific articles. The Journal is newsy. But there is one thing that the committee could hardly understand, and that is by what mental process, either of induction, deduction, intuition or flight of the imagination, certain of the scientific editorials could be classed as editorials scientific or otherwise. This is no reflection upon the articles so appearing because they were excellent, but the point the committee wishes to make is that some of them were not at all editorials, and we thought perhaps they should not have been listed as editorials.

It has occurred to the Committee also to recommend that certain of the best articles in the leading Journals might be more profitably reviewed, one or two in each issue, especially dealing with new things, and giving a synopsis or comment, an editorial comment if you please, upon certain of the recent advances in medicine and surgery.

We want to repeat, as we said at the beginning, that we believe it is the best State Journal of which we have any knowledge. (Applause).

THE SECRETARY: Following this report it has been customary for many years to request the members of the House of Delegates to make any comments they have on the Journal. All the improvements that have been made in this Journal have been made by this membership. I want to say very frankly that I can prove an alibi as far as I am concerned about ever having done anything to the Journal except to collate in it the things that you do and the suggestions that you make. We try to carry out those suggestions. Dr. Zimmerman suggested an excellent one. There are a lot of things we have been carrying as editorials that are really progress scientific reports. The idea of the scientific editorial as developed by the Council at the time of the creation of the scientific editors was that each month one or more of the scientific editors would write an editorial giving the advance in his branch of medicine, the most notable advance since the last time an editorial had been written. That plan has been very frequently departed from and quite widely departed from frequently. Dr. Zimmerman's suggestion will be called to the attention of the scientific editors. We will try and make them more editorial, and when they are not we will put them in another classification.

The one thing that we haven't in the Journal as much as we ought to have are the minutes of the meetings of the county societies. I want to say to the secretaries of the county societies and to the delegates so they will say it to their secretaries that if they will send minutes for the meetings of the county societies to us, giving a little something of what the essayist says and just a few remarks, the pith of what those who take part in the discussions say, so that their names appear in the Journal, that makes the medical history of Kentucky. Such addresses and papers as we have heard at this meeting would have been impossible if it were not for the attribution of mind against mind as occurs in the county societies. All those reports ought to be published in the Journal, so in making up the medical history of the state all its contributors will have received credit. If the secretaries of the county societies will make those reports and send them into the Journal, we will give them preference right away over everything that appears in the Jonrnal.

We will especially appreciate any other suggestions. Many of the best features that now appear in the Journal appear there from suggestions made at these annual meetings, and all our progress is made that way.

We make mistakes. Dr. South especially does. She has entire charge of all the typographical errors, and she puts a number in each issue because we get a quarter every

time there is a typographical error. She puts in as many as possible so it won't cost any more than necessary. She reads the proof a little carelessly before the JOURNAL is printed so as to get those mistakes in; then as soon as the JOURNAL comes out we get a quarter for each one that appears. That is one of the reasons we have a balance in the bank.

In order that it may appear in the record, I would like to report the organization this morning of the Woman's Auxiliary of the Kentucky State Medical Association, consisting of the wives of those members who have them. This organization is of great importance. It was organized in Texas three years ago and it spread over the entire United States like wildfire. The American Medical Association has recognized it and it has now come to pass in a number of states that there are many wives of doctors present at the annual meetings—as many as there are physicians present. That happened in Vermont and New Hampshire, at their recent meetings. It adds a great deal to the value of the meeting. The women know our problems; some of them know them better than we do, they can feel them more strongly. They infiltrate all of other women's organizations and can carry there the spirit of this sort of an occasion. I don't believe anything we are doing already is more important in the molding of public opinion along the great lines in which we are interested than the organization of this Woman's Auxiliary.

THE PRESIDENT: I will now call for the report of the Committee on Liability Insurance for Malpractice, by Dr. Wallace Frank of Louisville, Chairman.

L. WALLACE FRANK: The Committee on Liability Insurance begs to submit the following report:

REPORT OF COMMITTEE ON LIABILITY INSURANCE

There have been about two hundred responses to the letters sent out by the Secretary regarding liability insurance issued by the Kentucky State Medical Association. Approximately forty members have sent in their checks for fifteen dollars as premium for this insurance. These checks are being held by the Association until a sufficient number have been received to establish a fund sufficiently large to carry on the work. Owing to the delay in getting this number, several members have written requesting their checks be returned, but practically all have signified their willingness to go in for the liability insurance should such a department be established.

Certain of our members are under the impression that the fees, court costs, etc., will be paid out of this insurance fund. Such is not the case for the fees, costs, etc., are now paid by the Kentucky State Medical Association where it defends in the malpractice suits. The insurance fund is to be used solely as a payment of an adverse verdict where the Society defends and the defendant has taken liability insurance in our association.

Those members who have sent in their checks include some of the best men in the Association. These members are practically all located in the smaller communities. The Committee thinks that should the men in the larger cities send in their checks and enter into this work as have the others, we would find that this liability insurance could easily be taken care of by our State Society. Furthermore, experience has shown that the largest verdict against one of our members has been $3,000. Granted that we had two such verdicts against us a year, our fund would rapidly increase and as a result after a few years it would be sufficiently large to reduce the premium considerably.

Furthermore, as most of you know, the action for malpractice is instituted by a doctor; the case has been treated by one doctor, another doctor has called and says this case has been treated horribly and the patient goes to the court and sues. If we get all the men in the state in the association there will be a good many less suits instituted in a year, and as a result our premiums will be reduced to the minimum, probably three to five dollars a year instead of fifteen to twenty which we now pay to companies insuring against malpractice suits.

We further advocate that active propaganda be carried on in our Society Journal at least every other month to interest the members in this thing so that we can establish such a department. There is no reason why we shouldn't, and we can do it at much less cost than we as individuals are now paying to other companies.

THE SECRETARY: I move the adoption of the report.

The motion was seconded and unanimously carried.

THE PRESIDENT: We will next have the report of the Committee on Legislation and Public Instruction by Dr. V. A. Stilley, of Benton, Chairman of the Committee.

V. A. STILLEY: All of the Committee was not here, and Dr. Stine and myself have a report which I will read.

WHEREAS, from time to time in the history of the State self-interested and designing politicians have prostituted the control of our

educational and eleemosynary institutions for political purposes, forgetful of their purpose to reduce and eliminate ill health and inefficiency and to procure health, happiness and increase longevity for our citizens, now therefore be it

RESOLVED, That the Kentucky State Medical Association in its Seventy-third Annual Meeting assembled, every county in the state being represented by a duly elected representative, cordially approve the present State Board of Health and State Board of Charities and Corrections, and particularly endorse their non-political, non-partisan character and their selection of their employees because of their scientific training and efficiency and that we pledge the support of the medical profession to the continuation of these policies and request candidates for state offices and for the General Assembly to state their attitude to their people upon them before the election.

J. G. CARPENTER, Stanford: I move the report be received and adopted.

The motion was seconded and carried unanimously by a rising vote.

THE PRESIDENT: The next is the report of the Committee on Medical Ethics, J. W. Scott, of Lexington, Chairman.

REPORT OF COMMITTEE ON MEDICAL ETHICS

J. W. SCOTT: Your Committee on Medical Ethics has considered in the first place the relation of the Society to those of its members who are guilty of adoption and use of some of the cults which are particularly prevalent, in particular one which had its origin in California and which I think probably to avoid advertising as much as possible should be nameless at this time.

Your Committee feels that the county societies in their reports have shown their ability to deal with this situation very satisfactorily, and that endorsement of those societies in their action is all that is pertinent and all that is desirable for this House to do, realizing, of course, that any too great opposition to these cults only serves to advertise them and increase the business which they do.

Of course, we have nothing to do in this Committee on Ethics with anything except our relations with our own members who are doing this. As to their practices with the public that is for the Committee on Legislation, or some other Committee.

There is another matter which your Committee approaches with a good deal of diffidence because it is a rather delicate matter, but your Committee feels that there are some matters in which the higher standing members, the members of higher character and who have an influence in the community, are to some degree guilty of breaches of medical ethics which they don't really think of as breaches of medical ethics. I refer particularly to the violation of the Volstead Act by the doctors. Your Committee thinks that the violation of the Volstead Act is just as truly a violation of medical ethics as anything. If a man obtains whiskey for his own use it is just as much a violation as if he sells a prescription to somebody for $3.00. The men of any standing in the profession would scorn the idea of selling a prescription for whiskey. I don't believe it is done by men of standing except by those who don't realize it, and your Committee has the idea that such men of character and influence and standing in the community are known by the community to violate this act, particularly in the writing of prescriptions for their own use and in what your committee thinks is equally a violation of the Volstead Act in the use of the famous six pints of liquor for personal consumption.

As I say, we approach this with some diffidence because I think there is a great difference of opinion. I doubt if many members of the House would support this position, but your Committee feels that it is due to its own convictions (and I speak not only for myself but for the other members of the Committee) to say that in its opinion the use of the six pints of liquor which are assigned or which can be assigned or obtained by any physician each six months is intended for a professional use and is not intended or designed to supply him with the amount of liquor which he thinks he needs.

In the opinion of your Committee this is not a question of temperance, it is not a question of whether or not the use of alcohol is desirable or undesirable or whether a man ought to or ought not to get drunk; it is not a question primarily of the observance of law, but it is a question of the man who violates this law taking advantage of the fact that confidence has been reposed in him as a member of this profession and that certain privileges have been granted to him as a member of this profession, and when he does not live up to the law in the use of those privileges he is in a sense prostituting his profession.

I guess this will meet with very severe condemnation in some quarters, but your Committee feels it ought to make that statement.

THE SECRETARY: I would like to move you that the House of Delegates approve the report of the Committee very enthusiastically and endorse every statement that Dr. Scott as Chairman has made for it.

The motion was seconded and carried unanimously.

J. W. KINCAID, Catlettsburg: Since the reference to the violation of the Code of

Ethics, I would like to call attention of the delegates present that some years ago in their presence I stated that I thought the Code of Ethics ought to be read once a year before every county medical society at the annual meeting. I still think so. There are a good many points in it that are overlooked by doctors in the course of the year that perhaps they have not intentionally violated, but they do violate the spirit. I think it ought to be read once a year in every county medical society. I move that that be recommended.

The motion was seconded and carried.

THE PRESIDENT: We will next have the report of the Auditing Committee by S. B. Marks, of Lexington, Chairman.

Report Of Auditing Committee

S. B. MARKS: The Auditing Committee has reviewed and checked the report of Mr. B. P. Eubanks of Bowling Green setting forth the audit of the financial dealings of the Treasurer's and Secretary's office and that of the Journal in all of its connections. We find them correct. The Committee wishes to commend the very concise and efficient manner in which this report was rendered. The report was published in the last issue of the Journal which you have all seen. I would like to move, sir, that this report be accepted.

The motion was seconded and carried unanimously.

THE PRESIDENT: The next is the report of the Committee on Medical Education, by Dr. C. A. Calvert of Scottsville, Chairman. Dr. Gardner will read the report in the absence of Dr. Calvert.

Report Of Committee On Medical Education

W. E. GARDNER, Louisville: I have the report of the Committee on Medical Education as prepared by Dr. Calvert, and then I have a short supplementary report.

Medical education in Kentucky has been subject to considerable improvement during the last fiscal year by reason of material changes in the School of Medicine of the University of Louisville. The teaching facilities of this, the only medical school in Kentucky, have been increased by the expenditure of nearly $30,000 in alterations in the school building and in additional new equipment. The faculty has also been greatly strengthened by the engagement of several experienced teachers of national reputation. Clinical advantages, which have always been unusual, have been further augmented by a new agreement between the University of Louisville and the City of Louisville, whereby the professional side of the magnificent Louisville City Hospital has been entrusted entirely to the University. This is a mutually beneficial arrangement which at once gives the University a splendid teaching Hospital and affords the city the best possible staff for its great charitable institution.

At the request of the City the University has assumed responsibility for furnishing the staff of the Hospital on a twelve months basis, as a result of which the School of Medicine is building a permanent staff for the Hospital in order to avoid the numerous changes heretofore made. It is obvious that any hospital is served better by a permanent staff rather than by a staff which changes semi-annually. New members start at the bottom, are promoted on merit and have tenure of position solely dependent on service rendered. The University obviously will nominate those doctors who will reflect most credit upon itself, an arrangement which insures selections most desirable to the Hospital. Details regarding the agreement between the City and the University of Louisville were published in the Journal of February, 1923.

We cannot leave the subject of changes in the School of Medicine of the University of Louisville without pausing to express our regret for the enforced retirement of Dr. Henry Enos Tuley, for eight years Dean and Professor of Pediatrics. Until ill health undermined his powers he gave generously of his strength and unusual ability and brought about marked advancement under considerable handicap. His unexpected breakdown threw great responsibilities upon the Acting Dean, Dr. Stuart Graves, during the past year. These responsibilities were so discharged that the Executive Committee of the faculty and the Board of Trustees, when Dr. Tuley resigned, were unanimous in electing the Acting Dean to that office permanently. Dr. Graves is the senior teacher in the basic medical science in the school and has a reputation for untiring energy and for standing firmly for the highest standards in medical education.

It is reported that applications for enrollment in the School of Medicine this fall are the heaviest since modern requirements were put into force and that only those who have been fully prepared and have presented qualifications which promised development into the best type of doctor have been admitted. Every applicant is said to have been carefully investigated as to his character and personality as well as his scholastic ability. This is a most commendable attitude. Medicine is no place for the money grubber or the charlatan. Care in admitting students to the study of medicine will go far toward insuring the most desirable practitioners in the coming years.

The school authorities have taken as many students as they feel they can accommodate conscientiously to the best advantage of the students and have been compelled to refuse accommodations to desirable students because of lack of room for teaching. In considering transfers from other schools, preference has been given to men who have not previously had an opportunity to study medicine over those who have tried elsewhere and failed. "Repeaters" from other school have been excluded in considerable numbers in order that men from preparatory college might have their first opportunity.

A new modern school building, with ample accommodations for the modern teaching of large classes of students, is badly needed. In spite of the strict entrance requirements, desirable students have been necessarily refused and many more doctors could be educated if the facilities of the school were enlarged

The Trustees of the University of Louisville are reported to have ambitious plans for the School of Medicine. To these plans the profession of the state should lend every support. In our JOURNAL of last February Dean Graves submitted an article officially approved by the authorities of the University and the City of Louisville, which is worth rereading. The JOURNAL in that issue said editorially:

"The article concerning the University of Louisville, particularly its School of Medicine, appearing in this issue of the JOURNAL presents a program which marks an epoch in the history of Kentucky medical education It is a program of which any medical school in America might well be proud.

The State is under an immense obligation to this Municipal School. The School renders a service to the State which cannot be measured in dollars and cents. The State should show its appreciation by giving the School unqualified moral support and should perfect a program by which financial aid could also be given.

The State Board of Health and the JOURNAL have every confidence that the University authorities can and will carry out their program. Every alumnus of the five old schools, wherever he is located, and every doctor in this State, whatever his school affiliation has been, should pledge his moral and financial support to this program.

So far as the State Board of Health and the JOURNAL are concerned, they hereby announce that they will support the University of Louisville without reservation in its announced program for its School of Medicine."

To this declaration your Committee gives its earnest approval. The methods of the old schools everywhere are being revised. Kentucky should put itself squarely in line with other states for progress in medical education and we would recommend the appointment of a committee to confer with the President of the University of Louisville and the Dean of its School of Medicine to ascertain how this Society can best co-operate with the State's only school for the advancement of medical education in Kentucky. This school is rendering a great service to this commonwealth without any material help from us. We should give it our unqualified support.

Not knowing that Dr. Calvert's report would arrive, I had prepared a short supplementary report which I will read:

While probably not strictly within the province of this Committee, the question of the impending shortage of physicians in some of the rural districts of this state has occupied the attention of this Society to such an extent during the past two years that we deem it proper to say here that in spite of this fact the entrance requirements for medical students should not be reduced below that now required by the University of Louisville, and other reputable medical schools throughout the country.

It is our opinion that as the shortage of physicians becomes more apparent in the rural districts, better conditions of living and more adequate compensation will be provided.

The improvement of the road system of the state will go a long way toward the solution of this problem, and while it has been true for the past several years that educated young men and women have been attracted to more lucrative fields of endeavor, the law of supply and demand will help to some extent to relieve this situation which may not be so acute as it might now appear.

It is apparent now that more applications are being made to the Medical Department of the University of Louisville than the school is able to accommodate, and that all the classes in medical schools throughout the country are filled to capacity. This was not true for a time preceding the great war or for some years thereafter. The fact that inadequately trained medical men might be supplied to any community would not satisfy the medical demands of that community and conditions would remain little if any better than they were before.

The suggestion in the report of the Councilors of this Association that certain rural districts might provide medical scholarships for a limited number of students is worthy of the most earnest and serious consideration of this Society.

Dr. Graves has been making an earnest effort to procure the best instructors possible in all the basic sciences; he has rearranged the schedules of classes and numbers of hours to be devoted to each subject according to the regulations of the Association of American Medical Colleges, yet it is his desire, as well as that of his Board of Trustees and others associated with him, to conduct such a medical school as will graduate well rounded general practitioners of medicine and discourage the tendency to the development of specialists until adequate post graduate work and hospital experience have been obtained.

Your Committee endorses in a general way the recommendations made to this Society by Dr. Hugh Cabot of the University of Michigan in his scholarly address of yesterday for a better correlation of the teaching of the basic sciences of anatomy, physiology, biochemistry, and pathology with that of clinical branches of medicine and surgery, and believes that the full time professors in undergraduate medical schools should devote more time to the teaching of the practical phases of their subjects and their application to the patient, especially in medical schools with little or no endowment fund.

THE PRESIDENT: You have heard the report of the Committee on Medical Education. What will you do with it?

A motion was regularly made, seconded and carried that the report be adopted.

THE SECRETARY: If any questions have arisen in your minds in regard to anything in the report or in the work of your officers, we wish you would make it known now so that the matter can be discussed and settled. The policies of the Association naturally continue from year to year and are carried on unless this House instructs the officers to make some changes. The Council is carrying out your instructions. In the office we are doing just what you have told us to do from time to time. If there are any changes or additions or anything else that you desire done, this is the time to see that they are done, because it is all your business and it is not only your opportunity but your duty to say the things that you want said about any of the work.

THE PRESIDENT: Not hearing from any of you, we presume that everything is going along satisfactorily.

The session adjourned at seven-forty-five P. M.

September 20—Fifth Session Of The House Of Delegates

The fifth session of the House of Delegates was called to order at eight o'clock A. M., by President Frank Boyd.

THE PRESIDENT: The first order of business is the roll call.

The Secretary called the roll.

THE SECRETARY: There are one hundred and thirty-seven present.

THE PRESIDENT: There being a quorum present, we will proceed to the election of officers.

M. M. PHILLIPS, Crab Orchard: Before you proceed to that, Mr. President, I would like to offer these resolutions to show you that the heart of the Lincoln County Medical Society is on the left side.

RESOLVED, That it is the opinion of the Convention assembled that hereafter the Society that is host to the State Medical Association does not present a candidate for the office of President of the State Association.

LOUIS FRANK: I think that is a very good resolution and I would move its adoption.

The motion was seconded and carried and the resolution adopted unanimously.

THE PRESIDENT: Nominations for President are in order.

L. WALLACE FRANK: I would like to nominate a man well known to all of you. He comes from a long line of doctors and is located in this part of the State. No flowery speeches that I could make could do him justice, and I want to place in nomination the name of Dr. Rice Cowan of Danville for President.

THE PRESIDENT: Are there any other nominations?

LOUIS FRANK: I think loyalty is the greatest attribute an individual can have. The basis of loyalty is tradition. Ties of blood are just as great a demand for loyalty. I want to be loyal to my boy; he has always been to me and always will be. We are in a historic part of the state; we are practically on the trail made by Boone; we are almost in sight of the first capital of the state in which there is still standing the house from which the edict of the Governor went out and from which at that time the great Northwestern Territory consisting of this State, Ohio and Michigan was grouped. We are in a part of the State that to us particularly is fraught and filled with a great many traditions of which we are extremely and tremendously proud. We are in sight of the home of McDowell. We are in sight of the founding of the first institution of learning west of the Alleghany Mountains, the fourth medical college established in the United States, one that in 1830 had over 200 medical students and whose fame was known throughout the civilized world.

To me it seems but fitting that our next President, with our meeting in this historic territory, should also come from this territory, and it is therefore with the greatest pleasure accentuated and intensified by my love for Dr. Cowan that I arise not only to second his nomination but to move that the nominations be closed and his election be made unanimous.

P. C. SANDERS: Coming from Boyle County and having been associated with Dr. Cowan for the past four years, I arise to second that nomination, knowing the high type of man that he is and the high type of professional man that he is. I want the House of Delegates to know that Boyle County and Danville are back of Dr. Rice Cowan.

The motion to close nominations and make the election unanimous was carried and the Secretary cast one ballot of the Society for Dr. Cowan as Presdient.

THE PRESIDENT: I'll appoint Dr. Frank and Dr. Kincaid to escort the duly elected new President to the front.

Nominations are now in order for First Vice President.

J. H. BLACKBURN, Bowling Green: I would like to place in nomination for the office of First Vice President a man that we all know and the more we know him the better we like him and the more we see of his work the more we are impressed with his real professional attainment, C. W. Dowden of Louisville.

W. BARNETT OWEN, Louisville: I would like to second that nomination.

T. A. FRAZER, Marion: I move that nominations be closed and one ballot be cast for Dr. Dowden as First Vice President.

THE PRESIDENT: Allow me first to call for any further nominations.

The motion to close nominations was carried, and the Secretary cast the unanimous ballot of the Society for Dr. Dowden as First Vice President.

THE PRESIDENT: Nominations are now in order for Second Vice President.

A. T. McCORMACK: I would like to nominate one of the old wheel horses of this organization who has come here year after year. This is almost the first year he has not been in the House of Delegates. He has been the Health Officer for his County, gave up two or three years of his time practically without remuneration to serve the people of his County; he is a veteran in our ranks, and I would like to place in nomination Dr. J. G. Foley of Pineville.

The nomination was seconded.

THE PRESIDENT: Are there any other nominations?

W. E. GARDNER: I move the nominations be closed and the Secretary be instructed to cast the ballot of the Society for Dr. Foley of Pineville.

The motion was seconded and carried and the Secretary cast the unanimous ballot of the Society for Dr. Foley.

THE PRESIDENT: Nominations are in order for Third Vice President.

W. W. RICHMOND: There is a young man here who sat on the bench with me fifty years ago. We graduated together. He has been a regular well ordered physician all these years, and this Association has never honored him to my knowledge. I want to place in nomination Dr. E. G. Thomas from Marshall County, one of the best men we have, and he ought to be President one of these days. The nomination was seconded.

THE PRESIDENT: Are there any other nominations?

A motion was regularly made, seconded and carried that the nominations be closed and the Secretary be instructed to cast one ballot for Dr. Thomas as Third Vice President.

J. W. KINCAID: Mr. President and Members of the Association: It is my very, very pleasant privilege to present to you for your inspection the object of your choice as President Elect of the Kentucky State Medical Association. I have known Dr. Cowan for a good many years rather intimately, and I want to assure you that I think you have honored yourselves in honoring him. (Applause).

J. RICE COWAN: I feel under inspection since I came in here, and it makes me about as comfortable as I felt the first time I had a photograph taken. I think it is about the same sort of sensation.

These men here who are yelling so vociferously for me to make a speech know my utter inability to do so. I suppose and think very likely that this is one of those occasions when there are a great many things that might be said or ought to be said. Unfortunately I am unable to say those things, except to say that I thank you very much and from the bottom of my heart. (Applause).

THE PRESIDENT: The next order of business is the election of a Secretary.

M. M. PHILLIPS: Mr. President, along in the early spring of last year we organized a Tri-County Medical Society here in this room, and this resolution was presented and passed, and I was ordered to present it to the House of Delegates:

BE IT RESOLVED, That the member of the Tri-County Medical Society recognize and appreciate the faithful work of the Secretary of the Kentucky State Medical Association, Dr. A. T. McCormack, and we go on record

today endorsing his candidacy for re-election at the State meeting in Crab Orchard in September.

Oratory doesn't help me out any at all. Everybody here knows Dr. McCormack and knows that we must keep the line built up and the fires burning at home. I desire to place in nomination for Secretary of the State Medical Association Dr. A. T. McCormack. (Applause).

J. W. SCOTT, Lexington: I would like to second the nomination. I would like to say that I think everybody, even the few people who may be opposed to Dr. McCormack, (there are very few, I think,) honestly admits that Dr. McCormack's only ambition is for the good of this Society, that he has nothing for Arthur McCormack and all for the Kentucky State Medical Society. Whatever faults he has, if he has any, are on account of his zeal for the welfare of the medical profession of Kentucky and for this Society. (Applause).

C. Z. AUD: Most of the men here have known Dr. McCormack all their professional lives. I wish to third that nomination with all my heart.

M. M. PHILLIPS: May I make a motion that we elect Dr. McCormack by a rising vote?

THE PRESIDENT: That is out of order.

LOUIS FRANK: I would like to make a motion, sir, to put before the house and I want the vote on the motion taken by rising, and that is that one affirmative ballot be cast by the President for the Secretary.

THE PRESIDENT: I think the question before the House is electing a Secretary, and there has been a nomination made. The Chair will ask for any other nominations.

LOUIS FRANK: I move that nominations be closed and the President cast one ballot for Dr. McCormack.

The motion was seconded and carried unanimously, and President Boyd cast a unanimous ballot for A. T. McCormack as Secretary.

A. T. McCORMACK: Gentlemen, I am perfectly astounded at the opposition.

I am missing on three or four cylinders and won't exactly strike fire, but in all my life I never felt more overwhelmed by anything than by this re-election. Within the last year I have lost my mentor and my guide. My only chance for fatherhood now is in you who were his first love, and I want here and now in whatever capacity you desire to use me to dedicate my life to you, my friends, the medical profession and the people of Kentucky. (Applause).

THE PRESIDENT: I believe the next in order is the election of a Treasurer.

W. W. RICHMOND: I rise, Mr. President, to nominate a young and modest but fully capable man to fill the place of Treasurer of this Association. Since he has been serving this body the treasury has never been depleted. It has always had some funds in it. When the safe begins to look low and scant, he puts some money in there himself and dishes it out when he can. I therefore want to nominate Dr. McClure of Lexington.

The nomination was seconded.

THE PRESIDENT: Are there any other nominations?

J. E. WELLS, Cynthiana: I move you that nominations be closed and Dr. McClure be unanimously elected by the casting of one ballot.

The motion was seconded and carried and the Secretary cast one ballot of the Society for Dr. W. B. McClure as Treasurer.

THE SECRETARY: I would like to note that Dr. McClure is the oldest officer in point of service of any State Medical Association in the United States. This is his fifth term, twenty-five years.

THE PRESIDENT: The next is the election of delegates to the American Medical Association.

THE SECRETARY: The two vacancies are those of Dr. Abell and Dr. Richmond. I want to make another nominating speech. I want to nominate for the position of delegate to the American Medical Association one of the best men in the world. He has had a remarkable experience; he has been a delegate to the American Medical Association at every session since we have sent a delegate there since the reorganization. His name ought to be on the roster eternally and forever. It will be on the rosters of the hearts of Kentucky that long. I want to nominate W. W. Richmond of Clinton.

The nomination was seconded.

THE PRESIDENT: Are there any other nominations?

LOUIS FRANK: Before the nominations are closed I would like to move you, sir, that the other gentleman who has served us so efficiently, Dr. Irvin Abell of Louisville, be added to this name and both of them be elected at once unanimously by one ballot cast by the Secretary, if that is not out of order.

The motion was seconded and carried and the Secretary cast one ballot for Dr. W. W. Richmond and Dr. Irvin Abell as delegates to the American Medical Association.

THE PRESIDENT: Next in order is the election of Councilor for the First District.

THE SECRETARY: From time to time in the course of human events it becomes our duty and our privilege to honor our great men. The youngest man in this Association whenever it comes times to serve it is distinguished Councilor for the First District. I want to ask your unanimous consent to suspend the Constitution and By-laws and to elect Dr. Richmond as Emeritus Councilor for the state at large, that all of the other Councilors may have the opportunity of calling on him to come to their aid in any emergency in any District in the state, that he may in the whole state exert the energy and the diplomacy and the acumen which he has so well exerted throughout his term of office for the last twenty-five years in the First District.

THE PRESIDENT: It is my desire to cover any constitutional difficulties.

LOUIS FRANK: The Constitution isn't anything among friends. (Laughter).

THE PRESIDENT: Very well, all those in favor of this will signify by saying "aye", contrary "no." To make it still stronger I am going to ask a rising vote in Dr. Richmond's honor.

Carried unanimously by a rising vote.

THE SECRETARY: The next order of business is the election of a Councilor for the First District. At Dr. Richmond's request and suggestion, and that of the other delegates from the First District, I desire to place in nomination Dr. V. A. Stilley of Benton as Councilor. He has been Assistant Councilor for the First District.

The nomination was seconded.

T. A. FRAZER: I move the nominations be closed and the Secretary cast one ballot for Dr. Stilley as Councilor for the First District.

The motion was seconded and carried and the Secretary cast one ballot of the Society for Dr. Stilley.

THE SECRETARY: The other vacancy in the Council is in the Eleventh District, Dr. Lock. I think that District is more largely represented than any other District in this meeting, having a delegate from every one of its counties present throughout the meeting, and every physician practicing and registered in that District is a member to his County Society and to this Association.

THE PRESIDENT: Nominations are in order for Councilor for the Eleventh District.

J. E. WELLS: I want to place in nomination Dr. J. S. Lock of Barbourville.

W. B. HORNSBY, McKee: I feel that we ought to let well enough alone, and I should like to second the nomination of Dr. Lock.

LOUIS FRANK: I make a motion that the nominations be closed and Dr. Lock be elected by unanimous ballot cast by the Secretary.

The motion was seconded and carried and the Secretary cast one ballot of the Society for Dr. J. S. Lock of Barbourville as Councilor for the Eleventh District.

THE SECRETARY: Now, Mr. President, I move that we accept the invitation of Louisville for the next annual meeting. This invitation in due form has been presented from the Jefferson County Medical Society and the Commercial and Civic organizations of Louisville, from His Honor the Mayor and from the citizenship of Louisville generally.

M. M. PHILLIPS: Mr. President, we invite you back here again next year.

J. W. KINCAID: Under our Constitution we meet at Louisville next year whether we have an invitation or not. It is very courteous and thoughtful of Crab Orchard to invite us back and also of Louisville to invite us there.

The motion to hold the next annual convention in Louisville was regularly seconded and carried.

THE SECRETARY: The next order of business is the election of an Orator in Medicine.

W. E. GARDNER: I desire to place in nomination a man who is well known to the members of this Association and whose distinguished father was well known to many of us, a man who is capable of writing a classic paper for our next Association Convention, and I am sure it will come up to the past mark that has been set by Dr. Tyler for this year. I nominate Dr. Edward R. Palmer of Louisville.

WALLACE FRANK: I second that nomination.

T. A. FRAZER: I move the nominations be closed and Dr. Palmer be elected by the casting of one ballot by the Secretary.

The motion was seconded and carried and the Secretary cast one ballot of the Society for Dr. Edward R. Palmer as Orator in Medicine for the next Convention.

THE PRESIDENT: The next is Orator in Surgery.

C. G. HOFFMAN, Louisville: I don't want to put Louisville in the position of being selfish, but I would like to nominate a man well known to the Society and physicians in the state as Orator in Surgery, and that is Dr. Wallace Frank.

The nomination was seconded.

C. A. VANCE, Lexington: I move the nominations be closed and the Secretary cast

the unanimous ballot for Dr. Wallace Frank.

The motion was seconded and carried and the Secretary cast the unanimous ballot of the Society for Dr. Wallace Frank as Orator in Surgery for the next Convention.

THE SECRETARY: The Committee on Legislation and Public Instruction report their approval of the following resolution:

WHEREAS, the lack of an adequate system of hard surfaced highways in Kentucky is proving a most serious obstacle to the progress of education and the development of the business and social life of our commonwealth, and

WHEREAS, a large part of our profession is peculiarly aware of this deplorable condition because of the tragedy which impassable roads so often visit upon households in rural Kentucky where emergency medical attention is needed, and

WHEREAS, extension of the system of good roads will go a long way towards relieving the shortage of physicians in certain rural communities from which this State is threatened, and

WHEREAS, the proposed plan of the Kentucky Good Roads Association to finance the completion of our State Primary System by a $50,000,000 bond issue is thoroughly sound and feasible, and

WHEREAS, with all good citizens it is a basic assumption that they would only support such a proposed plan for financing our road system in the event the financial and construction administration of that plan is in the hands of an honest and efficient highway commission, therefore be it

RESOLVED, that this body now endorses the plan to complete by the $50,000,000 state bond issue our primary system of highways, and we now petition and call upon the candidates for Governor of both political parties to name as members of the prospective highway commission outstanding citizens who will inspire public confidence in this measure, and we also hereby ask and petition all candidates who will be elected in November to the State Senate and House, and all holdover Senators, to favor, at the next meeting of the General Assembly, a law which will give the people of Kentucky an opportunity to vote at the election of 1924 on the question whether or not the proposed bond issue shall be made to complete the construction of our highway system.

I move the adoption of this resolution.

The motion was seconded and carried unanimously.

J. H. BLACKBURN: In connection with this resolution, I move you, sir, that the President be instructed to name for the Kentucky State Medical Association a Good Roads Committee of four or five, that having been requested by the State Good Roads Committee. I move that the Committee be composed of four.

The motion was seconded and carried.

THE SECRETARY: This resolution has been submitted for presentation:

Whereas, the Kentucky State Medical Association assembled at Crab Orchard, Kentucky, in its Seventy-third Annual Meeting, recognizes that the National Health Exposition Association, with offices at 532 West Main Street in Louisville, Kentucky, is performing a commendable and practical work in producing Health Expositions throughout the United States under ethical auspices, and

Whereas, from the observation of many of our members such expositions have greatly benefitted the communities in which they have been held through teaching hundreds of thousands of people practical lessons in the preservation of their health, and

Whereas, in such expositions opportunity is given medical, dental, hospital, nursing, pharmacal and social service sciences to further protect and serve the people of our country through a wider dissemination of knowledge, be it

Resolved, that this Association call the attention of all state medical associations to the importance of this movement and its ethical presentment by the National Health Exposition Association in order that all medical societies wherever situated may have full information concerning it, and at their will may benefit by the experience of past health expositions and through them present the message of good health to the people of every locality.

I move the adoption of this resolution.

The motion was seconded and carried unanimously.

B. W. SMOCK, Greenville: I feel that at a time such as this, after witnessing and beholding a love feast of this order, we should continue it a little further, and I wish to read at this time a resolution.

Whereas, in recognition of the splendid efforts put forth by the many agencies co-operating in providing accommodations and entertainment for the members and guests of the Seventy-third Session of the Kentucky State Medical Association at Crab Orchard Springs, now therefore be it

Resolved, that it is the unanimous sense of this meeting that we extend to Dr. M. M. Phillips, Chairman of the Committee on Arrangements and Mayor of Crab Orchard, the loyal and generous-hearted physicians of Lincoln County, to Senator J. S. Haselden and his associates of the Crab Orchard Springs

Hotel and to the splendid citizenship, who so generously contributed in providing all further accommodations for the comfort of visiting members and guests, our heartfelt appreciation and the assurance that our stay has been most delightful in every respect.

I move the adoption of the resolution.

The motion was seconded and unanimously carried.

THE SECRETARY: In order to make the action of the general assembly legal, I desire to move that Drs. John E. Sullivan of Covington, Hugh Cabot of Ann Arbor, and J. B. Kennedy of Detroit be elected honorary life members of this Association.

The motion was seconded and carried unanimously.

THE SECRETARY: I move that the Councilors' expenses for the year and the ordinary expenses of the meeting be approved by the House of Delegates.

The motion was seconded and carried unanimously.

THE SECRETARY: I want to say right here that we might as well begin now in Kentucky to keep some of the money at home that we have been spending sending our people away on vacations. The roads are going to be good down here in the course of a year or two if we pass this bond issue, and when that time comes this historic spot will be much more accessible. It is of more than passing interest that the last white people killed by the Indians in the settlement of the State were killed in the Crab Orchard of which this is part, but the actual assassination was over near the old Crutcher house. This is the very beginning of our civilization in Kentucky, and I know it is a pleasure for us to have an institution like the Crab Orchard Springs Hotel here. Let us send people down here for their rests and vacations.

W. L. TYLER, Curdsville: I have a report here of the Committee on Health Problems in Education that I would like to present.

Report Of Committee On Health Problems

Since health problems in education affect particularly the schools, we can expect the school children to be the direct beneficiaries of such efforts. In nearly all cities of 20,000 or more there seem to be fairly effective health policies; but five-sixths of Kentucky's population and school children are really rural. Kentucky is distinctly a rural state. Agriculture today as it always has been is her chief industry. Four-fifths of her children are growing up in rural community schools. If numbers count, health problems in education is largely a problem of the country child. Have the teachers and the medical fraternity ever vividly portrayed the meager achievements of a poorly taught, poorly attended, country school in a badly constructed house with no considerations for environment or sanitary measures? Kentucky does not know under just what conditions physically, economically and socially four-fifths of her children are being prepared for citizenship. It is certainly somebody's business and duty to see the state's obligations in this respect are met. The principal public agencies available and at the same time competent for state wide service in these matters are the teachers and the medical profession. This work will be more effective if done jointly by the medical fraternity and the teachers than if undertaken separately.

National Joint Committee. Many years ago there was formed a National Joint Committee of leading educators and members of the medical profession which has been actively functioning and has done much good in a national way. In most all states there have been formed organizations of a joint nature between the state, medical and educational societies. In the national report of 1922 of the Joint Committee on Health Problems and Education, it was revealed that some states had been very active and accomplished much, while other states had been rather inactive. One of the very noticeable features of this report was that the most potent factor in promoting health problems in education, especially in the rural districts, was the public health nurse. This report stated that in the United States there were 2,000 rural school nurses, and of this number Kentucky claimed only eight.

Joint State Committee. It seems there has been no joint permanent organization in Kentucky. We are informed that for the past three years Professor John W. Carr, recently elected Professor of the New Normal School has been in charge of the co-operative work done in Kentucky. He was in charge of the movement which put through the physical education law and was delegated to help put this law in operation. The State Board of Health had very ably edited and published for the State Department of Education three bulletins, first a survey of the schools of the state; second, a Manual of Physical Education for the teachers of the state; third, a bulletin of health games and plays. Professor Carr and his secretary have recently resigned, and Miss Thomas is now trying to do the work previously done by both of them. Much good has been done in Kentucky and we desire to express our appreciation of the work done so far in the state. In our desire to help promote the work in Kentucky, we suggest that state medical societies take such steps as necessary to bring about the formation of a joint committee in Kentucky on Health

Problems in Education, composed of leading educators and members of the medical profession in the state.

Plans of Organization. A state organization so enlarged and organized as to be able to reach all communities would be uneconomical and impractical. There will be need of an organized unit, possibly each county being a unit. The plan of procedure in each unit and the object to be accomplished depends on local conditions and the personnel of the local committee. Some unit of local organization with state advice and supervision would be logical. With the facts before them the state committee with its sub-organizations can decide the steps to be taken and the policies to be pursued to meet its obligations to the childhood of our state. To our minds such a co-operation and activity between the teaching force and the medical profession of the state offers the best possible means of educating the public as to the character, purposes and high ideals of the medical profession as well as effective education of the public along health lines.

Mr. President, while I am on the floor I have a resolution I will read with the permission of the Chair.

In view of the fact that the state legislature will assemble in a few months and at its session there will be agitated questions of vital interest to the public, many of these questions possibly being relative to the service of the profession to the public for public good, we consider it a part of the profession's duty to take such tseps as are necessary to assist in securing only such legislation as will safeguard and promote the best interest and welfare of our citizenship. Therefore, be it

Resolved, that the House of Delegates of this Seventy-third session of the Kentucky State Medical Association, assembled at Crab Orchard, suggest that each county society in our state appoint a representative delegation of the county society, whose duty it shall be to confer with their particular representative in both houses before the session of the next General Assembly begins.

It shall be the duty of this delegation to explain to the various representatives and senators that inasmuch as the state will not trust the building of its roads, without the advice of a well informed engineer, likewise no state can afford to trust its health problems to laws made without expert knowledge and advice, at the same time explaining that the medical profession are the only group sufficiently informed to advise in such matters and that we are ever anxious to furnish such information as will promote the best interest of our citizenship.

THE PRESIDENT: You have heard the excellent report by Dr. Tyler, and also this resolution.

THE SECRETARY: I move their adoption.

The motion was seconded and carried unanimously.

THE SECRETARY: Since our last annual session, the American Medical Association has begun the publication of a popular health magazine, Hygeia. I want to move you, sir, that this Association which initiated the movement which afterward became national and resulted in the organization of this Journal approve its publication very cordially, that we urge our members to subscribe for the Journal, and always keep one in their waiting room so that their waiting patients may have the opportunity of reading its authoritative statements in regard to public health, and that to show our further approval the Council be authorized to subscribe for a copy of Hygeia for each candidate for the legislature for the next eight months so that they may have the educational advantage of receiving this journal and knowing the aims and objects as there set forth for the profession.

C. Z. AUD: I was going to suggest that there would only be probably one more issue that they would get before the November election, and if we sent this to each member elected we would be serving the same purpose.

THE SECRETARY: My idea was that we would start our subscriptions with the July number. Those numbers all contain the arguments that we want to put into their hands. Hygeia has made us a special rate so it will cost no more to get the entire number than it would to get half the number.

The motion was seconded and carried unanimously.

THE SECRETARY: Miss Sullivan and Miss Atkins have the blanks for subscriptions to Hygeia, and any member who subscribes at this time, paying the $3.00 for the subscription, will get Hygeia for the balance of this year, beginning with the September issue, and all of next year.

SUPPLEMENTARY REPORT OF COUNCIL

R. C. McChord: The Council desires to call the attention of the House of Delegates to the fact that the terms of Drs. W. W. Richmond and F. A. Stine as members of the State Board of Health expire December 31st next, and we recommend that the Kentucky State Medical Association nominate to the Governor to succeed Dr. Richmond for the statutory term as member of the State Board of Health the following: Drs. W. W. Richmond of Clin-

ton, V. A. Stilley of Benton, and D. M. Griffith of Owensboro: and that in case of a vacancy in these nominees that the name of R. W. Woodard of Hopkinsville be substituted therefor: and to succeed Dr. Stine, the following: Drs. F. A. Stine of Newport, J. W. Kincaid of Catlettsburg and A. O. Taylor of Maysville: and in case of a vacancy in these nominees the name of Dr. M. E. Howard of Harlan be substituted therefor.

Upon motion, duly seconded, the above nominations were approved and the President and Secretary were authorized to certify them to the Governor.

Upon motion, duly seconded, the Council was authorized to fill any other vacancies in these nominations or to make other nominations if necessary during the interim between the annual sessions.

ACCOUNTS ALLOWED

The Council reported that it had approved the following accounts and upon motion, duly seconded, they were ordered paid:

1923

September 29—Voucher Check No. 1			$237.20
Dr. A. T. McCormack, Secretary, Louisville to September salary		$150.00	
To September expense for and at State Meeting		87.20	
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 2			100.00
Dr. L. H. South, Business Manager, Louisville, to September salary.			
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 3			75.00
Elva Grant, Bookkeeper, Louisville, to September salary.			
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 4			31.55
Mary Atkins, Louisville, to Honorarium		25.00	
To expense at State Meeting		6.55	
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 5			44.06
Mayme Sullivan, Louisville, to Honorarium		25.00	
To expense at State Meeting		19.06	
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 6			200.00
State Board of Health of Kentucky, to legal service for Medical Practice Work for September.			
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 7			63.79
B. P. Eubanks, Bowling Green, to auditing books and accounts of W. B. McClure, Treasurer and A. T. McCormack, Secretary, 1922-23 and reporting same		50.00	
R. R. fare and meals		13.79	
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 8			23.86
Ludlow Petty, P. M., Louisville, to stamps.			
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 9			5.25
E. H. Roederer, Louisville, to 25 ribbons, Councilors.			
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 10			265.26
S. W. Bassett Co., Providence, R. I., to 348 gold buttons		128.76	
To 525 bangles		136.50	
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 11			48.00
Franklin Printing Co., Louisville, to 750 copies of program.			
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 12			32.21
Bush Krebs Co., Louisville, to 8 cuts.			
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 13			8.00
Edith M. Cole, Louisville, to deposition of Hugh Brodie vs. W. M. Martin, Drs. Sherrill, Farmer and Fallis.			
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 14			91.30
American Medical Association, Chicago, to 2500 inserts of Dr. Frank Boyd.			
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 15			14.31
Meffert Equipment Co., to 300 Ledger Cards		3.06	
To 5 M Plain White Cards		11.25	
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 16			57.41
Crab Orchard Springs Hotel			
To expense of Dr. South		34.00	
To expense of Dr. A. T. McCormack		28.00	
To telegrams, telephones		8.91	
To drayage, 6 boxes for Association		8.00	
To expenses of Misses Sullivan and Atkins		48.00	
To expense of Senator Beckham		5.00	
To expenses of Mr. Denbardt		39.00	
To expense of Dr. And		13.00	
To expenses of Dr. Kennedy, room and meals		73.50	
Total		257.41	
Less Credit for Ad for 1 year		200.00	
Approved by Council and Ordered Paid by House of Delegates.			

September 29—Voucher Check No. 17			100.00
Farmer & Farmer, Attorneys, Lexington, to legal services in case of Cohen vs. Nevitt.			
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 18			150.00
W. T. Cole, Attorney, Greenup, to attorney fee in case of Lawrence Lett vs. Dr. A. S. Brady.			
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 19			24.50
Dr. J. W. Kincaid, Cattettsburg, to expense as Councilor-Meeting at Louisville	21.00		
To postage	3.50		
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 20			24.00
Dr. Claude G. Hoffman, Louisville, to expense as Councilor.			
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 21			10.00
Dr. J. E. Wells, Cynthiana, to expense as Councilor.			
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 22			12.75
Dr. R. C. McChord, Lebanon, to expense as Councilor.			
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 23			15.80
Dr. V. G. Kinnaird, Lancaster, to expense as Councilor.			
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 24			464.23
Times Journal Publishing Co., Bowling Green			
To August issue, 2300-92 P.	530.30		
To 28 changes	5.60		
To 2500 cuvelopes	14.25		
To difference cost of setting 5466 to 6 pt.	10.00		
Total	560.15		
Less charges for setting tabulating:			
October issue	49.60		
December issue	23.82		
May issue	2.50		
July issue	10.00		
August issue	10.00		95.92
Net			464.23
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 25			547.60
Times Journal Publishing Co., Bowling Green:			
To September issue, 2500-112 P.	526.75		
To envelopes	14.25		
To printing envelopes	2.20		
To 22 changes	4.40		
To setting 89,419 ems to 6 pt.	89.49		
Total	637.09		
Less tabulating charge	89.49		
Net	547.60		
Approved by Council and Ordered Paid by House of Delegates.			
September 29—Voucher Check No. 26			31.00
Dr. W. B. McClure, Lexington, to expense as Treasurer.			
Approved by Council and Ordered Paid by House of Delegates.			

A. T. McCormack, Secretary.

ORIGINAL ARTICLES

INTESTINAL INFARCTION FROM INFLUENZA INFECTION, CASE REPORT.*

By J. Garland Sherrill

The following case impressed me as being of unusual interest, and I must confess that I have not yet concluded just what the lesion is.

I was called to an adjoining city to see a rather thin young man with some icterus of the conjunctiva. His skin was very "muddy" in appearance but not particularly yellowish in color. He impressed me as being very ill.

According to the history he had been seized two weeks previously with cold and cough which was diagnosticated by the family physician as grip or influenza. Two days before my visit he had suffered pain in the region of the gall bladder, and at the time I saw him he was still suffering from severe intra-abdominal pain.

Examination disclosed considerable tenderness in the gall bladder region, less tenderness over the appendix, although there was some in the appendiceal region and still more to the left of the umbilicus. His abdomen was not greatly distended and there was no evidence of acute peritonitis, although as one might expect there was some resistance at various points where tenderness was noted which might be indicative of acute peritonitis.

The physician who called me had made the diagnosis of acute cholecystitis with distension and a leak. I did not feel sure of this diagnosis, but was unable to offer any better solution. Pain was severe and two hypodermatic injections of morphine were given before relief was obtained. While not positive about the diagnosis yet I believed there was a grave intra-abdominal lesion present and acted on the diagnosis already made of acute cholecystitis.

Upon opening the abdomen in the right semilunar line bile stained fluid immediately appeared through the peritoneum and I thought the diagnosis was confirmed. It seemed certain that the patient had leakage from the gall bladder, and bile stained fluid in the abdominal cavity was confirmary evidence of this leakage. However, the gall bladder was still well filled with bile, not distended, nor collapsed, and there was no evidence of infection, rupture, or injury. I then decided the pathology could not be in that situation and passed my hand into the right iliac fossa to examine the appendix. This was brought into the wound with the head of the colon, the wound being enlarged sufficiently to permit easy view of both the head of the colon and the appendix. The appendix was perfectly normal from tip to base. The caput coli was very dark and purplish the serosa being torn or absent in one portion and this area had an ecchymotic or inflamed appearance. I examined the lower end of the ileum with the view of determining whether or not the lesion was due to typhoid fever. The man gave no history of typhoid fever, he had no diarrhea, but was rather constipated, there was no distension of the intestine. I found on the lower one and a half feet of the ileum five or six ecchymotic spots varying in size from the nail of my little finger to the nail of my thumb. These areas did not seem so much inflammatory in type or thrombotic. The largest one or two were perfectly smooth on the surface, that is the peritoneum was smooth and appeared a little "cupped" with just a trace of lymph around the marginal edge. These spots were located on the outside of the intestine from the attachment of the mesentery. I have seen a number of typhoid ulcers and these did not impress me as being typical although there was a strong suspicion in my mind that they were due to typhoid fever. A Widal test was made which showed no clumping of the bacteria in either dilution. A specimen of blood will be submitted to Dr. Stuart Graves for examination later for two reasons: First, I want to determine definitely about the question of typhoid fever; second to determine whether or not the lesions are due to syphilis. Since the operation I have been informed that this man was a syphilitic and had been under anti-syphilitic treatment. The peritoneum was reflected over the involved area of the cecum and the external wound closed without drainage.

The patient was in rather serious condition before operation and it was expected he would show greater reaction than was evident. He had very little reaction from the operative work. On the following day a red spot developed on the right cheek about the size of a silver quarter with some swelling and enlargement of the subcuticular lymphatics. The spot resembled an urticarial rash and involved only the right cheek. I examined carefully to see whther it was an ether injury, but it was not. He later developed from this a perfectly typical erysipelatous eruption. If the Widal findings are correct, it seems to me that this might be explained by influenzal infection with perhaps streptococcic overgrowth with infarction or emboli from some other portion of the body transplanted in the intestine.

*Clinical report before the Louisville Medico-Chirurgical Society.

I hope to later make a continued report of the case because to my mind it is extremely interesting. The patient was more icteric on the conjunctiva than anywhere else. He did not have what would be called typical jaundice, he looked like a man thoroughly septic. When I last saw the patient he showed considerable improvement in his general condition and the abdominal lesion was not causing him any serious trouble.

Some one asked the question whether the pancreas was examined while the abdomen was opened: I neglected to state that the pancreas was palpated and was not diseased or enlarged so far as could be determined.

DISCUSSION

Stuart Graves: In reply to Dr. Sherrill's question, I have never seen intestinal lesion syphilitic in type that would answer the description he gives.

It seems to me from the history related that the symptoms were rather typical of septic infarcts although nothing was said about the man having a septic temperature. If he had septic infarcts a blood culture might throw some light on the question, and it would also be interesting to know what the blood count showed.

Wm. J. Young: My interest in the case reported by Dr. Sherrill is limited to the question of syphilis. Intestinal lesions due to syphilis must be exceedingly rare and their development is always very slow. I do not see how anyone can figure that intestinal involvement in lues could develop in a rapid way. I would expect if he had a leutic condition that it would progress gradually not rapidly. One of the main differential points between malignancy and syphilis is that the latter develops much more rapidly than the former. Syphilis of the intestine is never acute and progresses much more slowly than any acute infection. Irrespective of what the Wassermann test may show, I believe the lesions in Dr. Sherrill's case are due to something else rather than syphilis. I have never seen intestinal lesions of the type described that I thought were due to syphilis. The therapeutic test is advisable in all obscure cases of this nature and will demonstrate whether the lesions are due to syphilis or otherwise before any serious damage has been produced. In other words, in three weeks time we could definitely determine whether the patient has syphilis or not.

Louis Frank: I have been trying to recall a book which I read in detail some years ago dealing with socalled rheumatism in its relation to certain petechial troubles. There are undoubtedly some conditions within the abdominal cavity attended by purpura just as noted on the surface of the body. I have seen two cases of this kind in one of which hemorrhage caused me to open the man's abdomen. The appendix was found distended with blood, the man had slight jaundice, he had enormous hemorrhages later under the skin and into the intestinal tract, which eventually led to his death. Dr. Sherrill's case may have been similar in character. I do not offer this, however, as an explanation, but merely as a suggestion.

About a year ago I operated upon a patient because of rupture of the gall bladder. We were absolutely unable at any time macroscopically to find the opening in the gall bladder, and even after the viscus was removed we were only able to identify the site of rupture by seeing a stain on the gauze placed over it. I have also seen ruptures of the common bile duct with leakage. If the rupture is very small and occurs at a time when there is over-distension of the gall bladder, after the viscus is emptied it may be almost impossible to locate the opening except in the manner I have described. However, I do not believe Dr. Sherrill's case is one of similar kind, nor do I believe that the presence of a small amount of bile or bile stained fluid in the abdominal cavity necessarily indicates that rupture of the gall bladder has occurred.

J. G. Sherrill (closing): I appreciate what Dr. Frank and the other gentlemen have said. This did not impress me as being purpuric hemorrhage. I have seen several cases of that kind where hemorrhage occurred from the mesentery. The hemorrhagic spots in the case reported were located along the opposite side of the intestine from the mesenteric attachment. I thought the most likely explanation was typhoid fever, or embolism from influenza.

A number of years ago I operated upon a patient under the diagnosis of acute appendicitis. When the abdomen was opened very marked purplish discoloration of several feet of the small intestine was observed. The involved area was inflammatory but not hemorrhagic. My explanation of this at the time was grip infection.

If a patient has a local focus of infection we should be able to discover it by careful anamnesis and clinical investigation. This man impressed me as being very ill, and we were so sure there was some gross lesion in the abdomen that probably we did not take the time to study the history as thoroughly as we should have done. The question of volvulus or torsion of the intestine had to be considered in this case. I did not believe torsion would cause the extensive ecchymosis which was present, and I did not believe it was volvulus because the larger amount of the discoloration was in the caput coli. The walls of the colon were at least an inch and a quarter in thickness which I thought was probably due to hemorrhage. There may have been an inflammatory process primarily in the cecum.

I hope further study of the Widal reaction, blood culture and blood count will furnish further information.

Blood culture was negative to typhoid: a growth of staphylococcus present, thought due to skin contamination. Wasserman was negative. The conclusion seems logical that this was a case of infarction from influenza infection.

SUB CONJUNCTIVAL DISLOCATION OF CRYSTALLINE LENS, WITH REPORT OF THREE CASES.*

By T. L. Bailey, Madisonville

After making a thorough search of what literature was at my command and not finding many cases of traumatic sub-conjunctival dislocation of the crystalline lens reported, I felt it unusual to have seen three cases in such a short space of time. It is not my intention to discuss the various types of dislocation of lenses, for my experience has not been sufficiently varied to allow it, but merely to report the cases with their end results, that have come under my observation.

Practically all the case reports I could obtain, dealt with congenital anomalies, subluxations and etc., and do not come under the scope of this paper.

Case No. 1. Mrs. J. B., age 46, who resides near White Plains, Ky., came to my office on November 16, 1915, with the following history; the day before, while attempting to pull a hungry calf from its evening meal, was struck in the right eye with one of its horns, suffering severe pain and immediate loss of vision. The lids were swollen, very dark, and difficult to separate. Conjunctiva was chemotic, and there was a large sub-conjunctival hemorrhage present completely encircling the cornea, obscuring entirely all view of the sclera. Cornea clear, anterior chamber filled with blood. There was a circumscribed swelling about 5 or 6mm across, beneath the conjunctiva, just back of the sclero-corneal juncture above. Did not have light perception. After a short observation, believing that she had entirely lost the eye and to save her what promised to be a tedious convalescence, I advised enucleation and she readily consented. Examination of the eye, after operation showed the swelling above to be the crystalline lens. She is now wearing an arterficial eye that is far from being entirely satisfactory.

Case No. 2. C. J., male, age 24, who resides at Graham, Kentucky, came to my office on June 10, 1916, with the following history; after a fist encounter the day before, found that he had his left eye injured. On inspection, he had the usual "black eye" common to such affairs and when he lids were separated could see a large sub-conjunctival hemorrhage. By oblique illumination the cornea was clear, but could not make out details of the iris, for the anterior chamber was completely filled with blood. There was a circumscribed swelling just back of sclero-corneal juncture above. Did not have light perception. After a few days observation I opened the conjunctiva over the swelling above and removed the disintegrated lens. I gave an unfavorable prognosis as to vision and the patient promptly disappeared.

He returned to me in November, 1921 for refraction. Right eye apparently normal. Left eye appeared smaller than right. Cornea and pupillary space clear by oblique illumination. Pupil was irregular on account of iricarceration of iris in the scleral rupture above. A blue line could be seen encircling the cornea from above to the nasal side, about 3mm back of sclero-corneal junction, evidently the healed scar as a result of the old rupture. Ophthalmoscopic examination negative, except for a few shreds floating in the vitreous. Vision was 3-200 and with a plus 10.00 Sph. 20-100. Ophthalmometer showed an high astigmatic error, but as I did not wish to Rx a lens for this eye and did not at a correction.

Case No. 3. Mrs. T. R., age 46, who resides near Madisonville, Ky., was seen at her home in consultation with Dr. J. O. Strother, February 1, 1917. She gave the following history; in stooping to pick up a pair of shoes in a dark room, she struck her left eye against the knob of an old fashioned chair post. She suffered severe pain and immediate loss of vision. External examination showed right eye apparently normal. Left eye, lids swollen and difficult to separate, and when separated the ocular conjunctiva was very red and chemotic, and there was a circumscribed swelling about 6mm in diameter, just back of sclero-corneal junction above. Oblique illumination showed anterior chamber filled with blood. Did not have light perception.

I did only things for immediate relief of pain, Dionine 5%, hot or cold compresses as she desired. Internally, Codeine and Aspirin as necessary.

I saw her again on February 8, 1916, still suffering severe pain. The swelling had somewhat subsided, but anterior chamber was still filled with blood and there was not any improvement in vision. I opened the conjunctiva, immediately over the swelling and removed the crystalline lens.

February 21, 1916. Lids about normal. The sub-conjunctival haemorrhage had ab-

*Read before the Eye, Ear and Nose, Throat Section of Kentucky State Medical Association, Paducah, October 16, 1922.

sorbed sufficiently to see the dark lines of the scleral rupture, extending from the location of the lens above, encircling the cornea for one half its circumference, about 3mm. back of sclero-corneal juncture. Blood still visible in anterior chamber, especially at the lower part. Could not make out the details of the iris. Vision, light perception.

I never saw her again until February 4, 1919, two years after her injury, when she came to my office for refraction. Right eye vision 20-50 plus 1.25 Sph. 20-20. Added plus 2.00 Sph. for near work.

On inquiring about her left eye, expecting to find it blind, she stated she could see objects about the room. Cornea, anterior chamber, and pupillary space clear. There was some irregularity of pupil, due to iricarceration of iris in scleral scar above.

Iris tremulous, media clear, and fundi normal. Vision 8-200 plus 12.00 Sph. and plus 2.50 cx 90 got 20-20. The final result in the 2nd. and 3rd. cases reported has caused me to feel that I made a mistake in operating in the first. Had I waited a sufficient length of time, and not been too eager to relieve my patient of what promised to be a prolonged convalescence and blindness in the end, she might have had a seeing eye today. I have had occasion since to see several injured eyes, seemingly at the time forever useless as to function, recover sufficient vision to enable the individual to earn a living and not join that helpless caravan, wearing a placard "Please help the blind." I remember well a man, who had been in a mine explosion, right eye completely destroyed. He had a punctured wound of sclera left eye, with loss of vitreous, punctured wound of cornea, with prolapse of iris, eye filled with blood and not even light perception. After a long tedious convalescence, he recovered and today has a vision of 20-70, that is sufficient to enable him to do ordinary labor. I have not been in such haste since in advising enucleating an eye that seemed at the time damaged beyond repair.

DISCUSSION

H. G. Reynolds, Paducah: Dr. Bailey's report of these cases, the fact that men who have been doing eye work for years without ever having seen a case, and that Dr. Bailey with five or six years work, reporting three cases. This reminds me of Dr. Kelly coming into lecture room one morning with the statement that he had just delivered twins, the first in a practice of forty years.

I think Dr. Bailey is to be commended for reporting his one case in particular, as we learn more by a fault than by our successes.

Too often modesty keeps from us such observations as have been made in the recitation of these three cases. If I had any advice to give to a young man in the specialty, it would be to never loose an opportunity to express himself on these occasions. Of course this means preparation if possible, but by all means say something.

Adolph O. Pfingst, Louisville: With Dr. Reynold's permission I will finish the history about Dr. Kelly's twins. It is my recollection that soon after his first pair he delivered a second pair and a little later a third pair. Cases of this kind exemplify a common observation that cases frequently run in groups. Apropos to this I would mention that in my first year of practice with no clinic to draw from I removed three eyes with intra ocular malignant growths.

Even though Dr. Bailey's practice were a very extensive one, I am sure that his three cases of luxated crystaline lens under the conjunctiva seen within fourteen months are out of proportion to the number of eye cases he has treated. These cases are, I believe, quite rare. I have had no case of the kind in my private practice and remember seeing but one case and that while assisting Prof. Greeff in Berlin some years ago. In his case the hemorrhage had cleared away, also most of the inflammatory reaction as the case was seen some time after the injury, hence the diagnoss and treatment was easy. I wonder whether Dr. Bailey would have been able to diagnose his last cases if he had not had the experience with his first. It seems to me that these cases seen soon after the injury when the lens is surrounded by clotted blood would be somewhat difficult of diagnosis. Dr. Bailey is to be congratulated upon the result of his cases, especially in the last one in which he finally obtained vision of 20-20 with correcting lenses.

Habitual Vomiting in Infants.—Vaglio encountered 20 cases of habitual vomiting among the 4 000 infants at the Naples children's clinic (less than 0.5 per cent.). Syphilis was certain or probable in 75 per cent. of this group of 20 infants. The 5 free from suspicion of syphilis all showed nervous hyperexcitability, and the fontanels were taut. Lavergne noted excessive intracranial pressure in 2 of his 3 cases of habitual vomiting, and in one of Vaglio's 5 cases hydrocephalus developed later. He therefore ascribes the excessive reflex excitability of the stomach to the central nervous system. Dollinger comes to the same conclusion, but is inclined to ascribe it to some birth injury of the brain, as there is always a history of difficult delivery in these cases.

TREATMENT OF TRIFACIAL NEURALGIA BY ALCOHOL INJECTIONS.*

By L. Wallace Frank, Louisville

Trifacial neuralgia of the major type is a disease seen not infrequently in the middle aged but is rare under thirty. In an article published during the past year Frazier states that he had recently had such a case in a patient in the late twenties, and that this was the youngest individual in whom he had seen the disease. Patrick mentions two patients in whom the disease began in the first decade, but these were seen by him at a later period. In our own observation in a number of cases we have seen none under the age of thirty-five and only one between thirty-five and forty. This disease is one of the degenerative period and is most common in the fifth or sixth decade although not infrequent in the fourth.

When we speak of facial neuralgia we do not refer to pain or discomfort caused by sinus disease, infection about the teeth or alveoli, or reflex from the tonsils or nasopharynx, we mean that condition commonly known as tic douloureux and characterized by recurring attacks or paroxysms of pain located in the terminal divisions of the trigeminal nerve. This pain has been variously described as stabbing, shooting or jabbing pain, or likened to a hot needle thrust into the tissues. At the onset of the disease the interval between attacks may be quite long, but later it shortens and finally the patient suffers almost continuously.

During an attack any movement of the face, such as that due to coughing, sneezing, eating, washing the face, teeth, etc., may precipitate a paroxysm of pain. This is well illustrated by a patient referred to us by Dr. Ben Carlos Frazier and whom we treated two years ago. This patient, a lady, carried a writing pad, and told us she had talked practically none for more than two months on account of the fact that talking precipitated a paroxysm of pain. We have seen a number of patients who had lost a great deal of weight on account of their inability to eat, and one lady of sixty-six had lived on liquids for five years.

There are certain areas which when irritated are most likely to induce a paroxysm of pain. These are referred to by Patrick as dolor-genetic zones and are located about the alæ of the nose, the junction of the mucous membrane and skin of the upper lip, and about the mental foramen and teeth. Only six months ago we saw a man who told us that the least irritation of the upper lip on the right side would cause an attack of pain in that locality. Irritation of these areas even though very slight may precipitate an attack, whereas similar irritation elsewhere has no effect.

The pain of trigeminal neuralgia of the major type may occur in any of the terminal divisions of the nerve. It is said that it occurs on the right side a little more frequently than on the left, and that it seems to be more common in males than in females. Such, however, has not been our experience as we have seen the disease more frequently in women and strange to say the left side has been more often involved. The branches usually the site of pain are the terminals of the second and third divisions. Patrick has said that pain limited to the supra orbital division is probably not true trigeminal neuralgia. However, we have seen one patient in whom the pain was limited to this region and in whom alcohol injection of the nerve produced relief for more than a year. As a rule the disease begins in the lower two divisions and later the first becomes involved. At times two divisions may be the sites of pain, but strange to say these are always adjoining ones. We have seen patients where the pain was located in the second and third and in the second and first divisions, but have seen none in whom the first and third divisions were simultaneously involved unless the second was also affected. Rarely all three divisions may be the sites of pain.

As to the cause of trigeminal neuralgia little is known. Some think the disease begins as a neuritis in the terminal branches, and others believe that the pathology (if any) is located in the gasserian ganglion. Certainly, however, excision of the terminals may produce temporary relief, and we would not expect this to happen were the disease located in the ganglion. Furthermore, we can understand why neuritis should develop in the terminal filaments of the face and teeth, but just what would produce a pathological process located only in the gasserian ganglion is difficult to comprehend.

Regarding the treatment of trigeminal neuralgia it may be said at the outset that medicines are of little value. Sedatives may be useful in early cases, but later the pain will recur and surgical measures must be employed to give relief. These should be instituted early, that is be not delayed until the patient's morale is broken by the terrible suffering and his strength exhausted because of inability to take proper nourishment. Formerly peripheral neurectomy was advised as a means of curing these patients. The relief afforded by this procedure was temporary and the pain often recurred in from nine to fourteen months. Now the operation is rare-

*Read before the Jefferson County Medical Society.

ly done and alcohol injections of the nerve trunks as introduced by Schlosser, or root section or excision of the ganglion are the methods generally advocated.

Alcohol injection of the supraorbital nerve is easy of accomplishment and the results are very satisfactory. In doing this a fine hypodermic needle is used, the supraorbital notch identified, the needle introduced and about 1 c.c. of 70% alcohol injected. Following the injection there is usually some edema of the upper lid which sudsides in two or three days under treatment with ice packs. The results are fairly uniform and entirely satisfactory as is illustrated by the case of Mrs. S. referred by Dr. J. A. Flexner. The patient, a lady aged sixty-eight, had been suffering with recurring attacks of left supra-orbital pain for more than three years. In the intervals between attacks she was perfectly comfortable, but during the periods in which she was having pain the least irritation, exposure to a draft, washing the face, etc., caused a paroxysm of pain in the supraorbital nerve. Careful examination of the sinuses revealed no disease and we concluded that this was a case of true trifacial neuralgia. Alcohol injection was made according to the procedure outlined in the foregoing and the patient was free from pain for more than a year.

In doing injections of the second division greater difficulties are encountered. A point is taken about 3 cm. in front of the ear just below the zygoma and the needle introduced forward, upward and inward to the depth of 4½ to 5 cm. at which level the nerve trunk should be encountered as it enters the infraorbital canal. Care should be taken not to penetrate deeper than the distance mentioned on account of the danger of injuring one of the orbital vessels or of injecting the alcohol into the retrobulbar tissue. If such a complication should occur ice packs must be applied immediately to the eye and side of the face. As a rule the swelling will sudside and no permanent damage be done.

In injecting the third division a point is taken 2 cm. in front of the ear and the needle pushed straight inward to the depth of 4½ cm. at which level the nerve should be encountered as it leaves the foramen ovale. In injecting the third division we make it a point to tell our patients that there will be some stiffness of the jaw and that not infrequently the teeth will not meet properly. This is due to infiltration of the alcohol into the motor part of the fifth nerve which emerges from the skull with the third division and which supplies the muscles of mastication. Most patients care nothing for such trivial discomfort so long as they can be relieved of the pain.

Recently Grant of Frazier's clinic has devised an instrument by which the angles for introduction of the needle can be accurately measured. He performed a number of injections upon cadavers and measured the angles for insertion of the needle and found in a series of more than one hundred and sixty cases that these were fairly constant. Consequently by using such an instrument one can readily perform this operation. However, in the hands of those accustomed to using alcohol injection of the trunks of the fifth nerve the needle will unconsciously be inserted at the proper angle and no such instrument is necessary.

In 1913 Hartell devised a method by which the needle could be introduced into the gasserian ganglion and the alcohol injected at that point. In his first series of cases trophic keratitis followed.

In presenting this subject we did not wish to disuess any of the minor neuralgias nor those conditions simulating major trifacial neuralgia. However, we thought it might not be amiss to mention the fact that not infrequently neuralgia of the sphenopalatine ganglion is mistaken for true trifacial neuralgia. This is well illustrated by case of Mrs. J. who had been injected with alcohol and anesthesia obtained on numerous occasions by one of our confereres, but no relief of pain followed. Recently she was referred to us and we made the diagnosis of spheno-palatine neuralgia. In testing for this by the use of cocaine in the nares we obtained complete cessation of the paraxysms five minutes after the cocaine was applied, showing most conclusively that our diagnasis was correct. She will later be treated by alcohol injection and in her case we feel certain an excellent result will be secured.

In conclusion we would like to emphasize the following:

(1) That peripheral neurectomy for trigeminal neuralgia has been abandoned and that alcohol injection of the nerve roots or trunks has to a large extent supplanted it.

(2) That a proper conception of the anatomy of this region is essential to one doing this work and the operator must at all times know through what tissues the point of his needle is passing while inserting it into the nerve trunks.

(3) That complications following injection of the nerve roots are relatively few when the operation is properly performed.

4) It is most important that a correct diagnosis be made if it is expected that this method of treatment will be successful, and in arriving at the diagnosis the possibility of spheno-palatine neuralgia must not be overlooked.

DISCUSSION

J. W. Price, Jr.: I have greatly enjoyed the most excellent paper read by Dr. Frank. In the treatment of trifiacial neuralgia there is one point to which I wish to call attention and upon which I think great stress should be laid, i. e., that trifacial neuralgia is essentially a surgical disease. The fact that few patients suffering with this affection have appled to Louisville surgeons for relief during the last ten years shows that this fact is not thoroughly recognized by the profession in the state of Kentucky. In other medical centers of similar population such patients are operated upon with much greater frequency than in Louisville. It seems to me that physicians of Kentucky should awaken to the fact that trifacial neuralgia has been recognized as a surgical disease, and that the surgeons of Louisville are as well prepared to treat such cases as surgeons elsewhere.

In regard to alcohol injections: Dr. Frank has made this phase of the subject perfectly plain and further review seems unnecessary. In patients seventy to eighty years of age who, on account of their age or perhaps some physical condition precludes a major operation, alcohol injections is the procedure of choice. There will always be found a group of cases in which major operation is refused so long as they know there is some minor procedure which may be substituted for it.

As Dr. Frank has so clearly stated, alcohol injection offers only temporary relief, and there should be no misunderstanding about this feature in the mind of the patient or the attending physician before the procedure is undertaken in any case.

As to alcohol injections into the ganglion itself: The originator of this procedure admitted that twenty-five per cent of his patients so treated had ulcerative keratitis. In the hands of other operators thirty-three per cent of the patients developed ulcerative keratitis. Personally I would disapprove of alcohol injection into the ganglion.

In a case referred to us by Dr. Gardner a year and a half ago we were able to complete the major operation under local anesthesia. It seems to me that this operation may be safely done under local anesthesia. I know of at least one surgeon who has done the complete operation many times under local anesthesia with excellent results. In the case mentioned referred to us by Dr. Gardner we had to discontinue the original operation on account of the persistent oozing. Two weeks later under local anesthesia the wound was re-opened without any pain to the patient, the entire field surrounding the sensory root was exposed and the root divided. The patient made a complete recovery and has remained well since then.

W. E. Gardner: In the Chicago Year Book of Mental and Nervous Diseases for last year there is a report by a Norwegian physician who has used alcohol injections in one hundred and eighteen cases of trifacial neuralgia with permanent relief for periods ranged from one to one and a half years. The comment is made that it is remarkably how universally this method is being used at this time. Even in Norway, this physician is using the same method that has been employed by surgeons in this country for a long time, especially by Patrick of Chicago who has used the method so successfully for a number of years. Also in the same edition of the Year Book there is reference to an article by Bailey which was read before the Boston Neurological Society and published in the Archives of Neurology and Psychiatry, in which he presents an excellent analysis of existing information concerning the pathology. He holds to the theory that the pathology is in some of the peripheral branches, as the gasserian ganglion showed no changes. This Norwegian physician referred to above agrees with Cushing and Frazier that section of the posterior root of the ganglion is the only method of obtaining a cure. While in many cases, especially in elderly people, injections of alcohol may prove of temporary benefit, yet he agrees that the only method of obtaining a permanent cure is by division of the posterior root. And I may say, in passing, that this is not such a simple operation, it is brain surgery, and unless one has studied the anatomy of the parts very carefully and has been associated with some of the pioneers in this line of work, I do not believe he will find the operation easy of execution. It is not always easy to find the posterior root and divide it.

I was glad to have Dr. Price mention the patient he operated upon and who was formerly under my care. The patient came here and entered the hospital about two years ago; she lived in an adjoining state. I am glad to know that a permanent cure was obtained. If the operation is carefully done it should be successful in the great majority of cases.

John J. Morean: It is my practice to advise surgical procedures in tic douloureux. If I had the disease I believe I would try alcohol injections first. For obtaining complete relief the Spiller operation is preferred.

A word or two about the diagnosis: In some of the symptomatic types the character of the pain is not so typical, the sharp, shooting pain, that is present in true tic douloureux. Then there is another type that goes along with high arterial tension where pain is distributed over the fifth nerve, most frequently over the lower branches and extends to the upper branches. However, this pain is not acute or as typical as in true tic douloureux. I have seen several of these patients relieved when the blood pressure

was reduced, or when they had taken care of themselves in a way that the blood pressure was not an important factor. I recall two or three instances of that character that might have been mistaken for true tic douloureux had not the blood pressure been observed carefully.

I have seen several cases of tic douloureux apparently relieved, or at least the patients made comfortable several years before they began to use alcohol injections or surgery in these cases, by the method advocated by Dana of giving ascending doses of strychnine. I recall one patient particularly who had suffered for a long period of time. She was relieved by ascending doses of strychnine; she finally took one quarter grain three times a day.

L. W. Frank (closing): I have had no experience with the administration of strychnine in the treatment of trifacial neuralgia. It is true, as Dr. Price has stated, there are a number of cases in the country around this district that are treated for everything under the sun except trifacial neuralgia. Frequently these patients take huge doses of various drugs because that is the only way they can get relief from pain. This relief from pain, however, is only temporary and they soon have to take another dose. I have seen one or two patients who suffered from chronic veronal poisoning; they tried to get relief by taking massive doses of this drug sometimes combined with codeine.

As Dr. Price and Dr. Gardner have stated, trifacial neuralgia is a surgical disease and must be treated surgically to obtain complete relief. There is no question that the major operation of section of the root devised by Spiller is the best procedure to follow. The operation is by no means complicated, yet it is a major procedure and should not be attempted by the inexperienced. It is much simpler than removing a brain tumor and is not attended by post-operative complications or sequelae sometimes noted in tumor cases. Furthermore, tension on the brain is normal, and it is simply a question of experience, and correct anatomic knowledge. The same statement will apply to the injection method; it is a matter of experience and practice. Experience practice and anatomical knowledge are primary requisites to successful injection operations.

As to the case mentioned in the paper in which the ganglion was infiltrated by accident: In talking with some eastern surgeons I found they had experienced similar accidents, that is in making an injection into the nerve trunks the alcohol had infiltrated alone the nerve into the ganglion with resulting keratitis. If goggles are placed over the eyes and the cornea carefully watched for complications, there is no reason why any permanent damage should occur from the keratitis. I have seen one case where the lids had to be sutured for a long period yet the patient finally had a perfect result. The possibility of complications is always explained to the patients before the operation is undertaken.

INITIAL BLADDER SYMPTOMS IN TABES DORSALIS.

By C. W. Dowden, Louisville

The rarity with which the typical text book case is encountered, when dealing with the chronic manifestations of disease, must constantly impress itself with increasing force on the student of medicine. The picture drawn by the author and teacher, and impressed on the mind of the novice in medicine, is rarely seen by him in quite the same form. The component figures will all, or nearly all, be there quite frequently, but their relative positions will be different, their values not the same. It is this constant variation which makes diagnosis a matter of something more than merely memory and perception; which makes essential a degree of judgment, and the ability to weigh and appraise the evidence which bears on the final conclusion. Three cases seen recently serve to emphasize the extent to which the picture may depart from the typical, in that the presenting or initial symptoms were of a character to put the examiner entirely off the track. Brief histories follow.

Case A.—White—male—age 63. Referred on account of bladder symptoms of two years' duration consisting of nocturia, four of five, hesitancy and difficulty in starting the urinary stream, and dribbling of urine during the night. He had never been catheterized.

The family and personal history were both negative. Syphilis was denied. There had been no serious illness of any kind and the habits had been excellent.

Physical examination revealed a blood pressure of 174|88, some irregularity of the heart with a loud systolic murmur, and moderate cardiac hypertrophy. There was moderate enlargement of the prostate as palpated per rectum. The patellar reflexes were present and equal. Pupils were regular and equal and reacted normally to light and accommodation. Rhomberg was negative.

Routine examination of the blood gave normal findings. The blood wassermann was negative. The urine contained a faint trace of albumin, a few pus cells and no casts. On catheterization, 6630 c. c. of residual urine was obtained. Tests of kidney function including the blood urea nitrogen, phthalein output, and the determination of the constant of Ambard gave returns within normal limits. The patient had previously been advised that his symptoms were caused entirely by prostatic hypertrophy and presented himself

for examination, not so much for diagnosis as to determine whether he was in suitable condition for surgical intervention. He was informed that he was a good surgical risk considering his years. He underwent prostatectomy shortly after this examination and made a good operative recovery.

The surgeon reports that a few months later he returned complaining that the bladder symptoms were unrelieved. A repetition of the physical examination at this time showed that the patellar reflexes were absent and that the eyes reacted to accommodation but not to light. A spinal puncture was made and the fluid gave a positive Wassermann as well as a typical tabetic curve with the colloidal gold test, thus establishing beyond question the diagnosis of Tabes.

Case B.—White—male—age 66. Presented himself on account of persistent numbness in the feet, giving rise to a feeling as if he were "walking on blocks of wood." He had had no other symptoms of any sort, and was in appearance a very exceptionally well preserved man for his years.

The history was entirely negative except for the consumption of 10 to 15 drinks of whiskey daily for several years and a very uncertain account of a sore on the penis about fifty years before. One point was brought out, however, to which no especial importance was attached at the time, but which assumed considerable significance later. In reply to the routine question in regard to rising at night to micturate, the patient replied that for several years he had had to get up once or twice at night but that latterly he "had been much better in that respect, and did not have to get up at all."

On physical examination the reflexes, both the patellar and other deep reflexes, the eye reflexes and the superficial reflexes were present and normally active. Cutaneous sensibility both to pain sensations, and to touch and heat and cold was diminished in certain areas about the ankles and feet, but was normal elsewhere. Some interference with co-ordination was revealed in the finger to nose test, the Rhomberg was rather doubtfully positive, and there was some difficulty in walking with the eyes closed.

Routine examinations of the blood and urine were negative, but the blood Wassermann was reported three plus. A spinal puncture was then made, and the Wassermann on the fluid was reported 4 plus. Colloidal gold and mastic tests gave typical tabetic curves.

Case C.—White—male—age 41. Presented himself on account of difficulty in walking with a decided tendency to stagger or fall. He had also had headaches of moderate severity. These symptoms had been present about three months. The family history was negative. The past history was likewise negative except for two attacks of typhoid fever in youth and an automobile accident from which recovery was complete a year before examination. He denied syphilis but had had one severe attack of gonorrhea. There had been occasional attacks of vertigo following the automobile accident.

The present illness began with an attack of vomiting, accompanied by fever, followed in a few hours by partial right hemiplegia, which cleared up spontaneously within three days leaving only some disturbance in gait. Sometime prior to this occurrence he had noticed irritability of the bladder with rather marked frequency. The blood pressure had been elevated, at times being as high as 200 for the systolic.

On physical examination the blood pressure was found to be 180|136. The heart was negative except for accentuation of the aortic second sound. The lungs were negative. The abdomen was negative. The patellar reflexes were about equal but considerably exaggerated. There was no ankle clonus. Cremasteric reflexes were normal. The pupils were somewhat irregular but reacted both to light and accommodation. The Rhomberg test was positive. Definite impairment of co-ordination was shown by the finger to nose and finger to finger tests. The gait was somewhat suggestive of tabes although not typical. There was rather marked inability to walk a straight line with the eyes closed, and complete lack of orientation, when made to wheel sharply with the eyes closed.

Routine examination of the blood was negative, including the Wassermann test. The urine contained a trace of albumin, no casts, and many pus cells. As the prostate was moderately enlarged, the patient was referred for a urological examination. The bladder was reported to be congested and trabeculated with a small diverticulum and a small area of ulceration. There was moderate trigonitis and moderate enlargement of the lateral lobes of the prostate. Appended to the report was the comment "a bladder such as would be consistent with a spinal cord lesion."

As there seemed grounds up to this point for a definite suspicion of syphilis of the central nervous system, a spinal puncture was made. The fluid was found absolutely negative in every way.

In the interval since this examination treatment has consisted merely of diet and hygiene together with some duodenal drainages on account of the rather definite suggestion of chronic gall bladder infection. On the last

visit the patient reported marked improvement in gait, the headaches had quite disappeared and the blood pressure was unchanged. The Rhomberg is now negative. The reflexes are practically normal and the urinary symptoms considerably improved.

The first case is cited because it appeared on a fairly comprehensive initial examination to be a typical senile prostatic hypertrophy, the relatively moderate enlargement of the prostate per rectum, as compared with the severity of the symptoms, being explained on the assumption of a median bar. There was nothing in this case when first examined, nor even when the findings are reviewed in the light of later knowledge, to suggest the true condition, tabes. There was nothing to suggest the need for a spinal puncture at this time, yet this procedure probably would have saved the patient an unnecessary operation.

The second case is cited on account of the statement of the patient that his previous annoyance from nocturia had ceased some months before. This fact, obviously a source of gratification to the patient, should at once have suggested to us the real condition. Fortunately in this case the fact that it did not do so did not prevent us from arriving at a prompt and well founded diagnosis.

The third case is cited largely because it is, in many respects, the reverse of the first. Many symptoms suggestive of neurosyphilis were present but it proved to be otherwise.

1. Atypically, the initial symptoms of tabes may consist entirely of some form of bladder disturbance. These urinary symptoms may precede the development of other and more usual details of the picture by several months. They may consist in lessened tonus of the bladder wall and a partial abolition of the emptying reflex with consequent increased capacity, or in hesitancy or difficulty in micturition, or in irritability of the bladder.

2. In cases of this type in which there is no history of syphilis, in which the reflexes are normal, and in which the Wassermann reaction on the blood is negative,—a small but definite class—the most conclusive and satisfactory diagnostic procedure is spinal puncture, since the spinal fluid is as a rule positive for many months prior to the development of symptoms of any kind. It seems certain that routine spinal puncture in cases of chronic bladder disturbance, in which complete urological investigation does not afford an adequate explanation of the trouble in local pathology, would obviate a certain number of uncalled for prostatectomies.

3. The unexplained abolition of a nocturia of several years standing should at once arouse suspicion that the cause may lie in diminished bladder sensibility from a lesion in the cord, and not, as the patient will be inclined to suppose, from a spontaneous improvement in function.

THE ROENTGEN-RAY AS A THERAPEUTIC AGENT IN DERMATOLOGY.*

By William J. Young, Louisville

In the treatment of skin diseases there is no single therapeutic agent of greater importance than the roentgen-ray; and it must also be remembered that there is no therapeutic agent in the armamentarium of the dermatologist which is more capable of producing harmful results, provided its application is not properly guided by accurate diagnosis and safeguarded by exactness in its technical manipulation. In dermatology, as in general medicine, those agents which when skilfully used are most capable of doing good, when employed by the careless or ignorant, are likely to be pregnant with disaster.

The satisfactory and successful treatment of skin lesions with the roentgen-ray implies not only an adequate understanding of the technique incident to its employment and observance of the requisite factors to insure the greatest safety to the patient, but equally important is a thorough knowledge concerning the diagnosis and prognosis of the lesion which is to be treated.

It is a noteworthy and unfortunate fact that many if not all of the instances of roentgen-ray burns, dermatitis, telangiectasis, atrophy, etc., about which we have heard in the past, owed their origin to treatments administered by those whose principal qualifications consisted in possession of the physical apparatus which was usually purchased and used for diagnostic purposes.

Such operators are prone to adopt the therapeutic side of roentgenological practice purely because of its inherent commercial aspects, feeling that no particular diagnostic accuracy is required, since whatever the lesion may be "they are going to use the x-ray anyhow."

So long as people suffering from skin diseases are content to seek treatment rather than diagnosis primarily, and are willing to accept roentgen-ray treatment regardless of who applies it, just so long shall we see unfortunate results and therapeutic radiations continue to receive an undeserved "black-eye." While it is true that, even in the hands of trained dermatologists, unfavorable results may occasionally follow roentgen-ray radia-

*Read before the Louisville Medico-Chirurgical Society.

tion, it is also true that such occurrences are now extremely rare and when noted are apt to be due to carelessness or inattention to important technical details. Accidents of that kind may properly be compared to the occasional instances where a surgeon leaves a sponge in the abdominal cavity after celiotomy.

With advent of the Coolidge tube, "which gives a constant performance day after day and week after week," it became possible to accurately measure the dosage of the roentgen-ray administered. In the last few years, by means of biological checks and the application of simple mathematical principles, doses of unfiltered x-ray have been so standardized that there is now little excuse for administering this form of treatment to the point of an overdose, i. e., one which would cause permanent changes in the skin. The majority of skin lesions are treated with unfiltered rays. At the present time the most common cause of an x-ray burn is undoubtedly failure on part of the operator to place in position the aluminum or copper filter which he intended to use, and upon the basis of which the dosage was figured. Such an omission indicates no inherent weakness in the roentgen-ray itself, but depends entirely upon the liability of human beings to forget, and is consequently remediable by methods which have been found effective in the prevention of industrial accidents. A number of ingenious and more or less automatic reminders have been proposed to insure adequate filtration. Probably the most effective is the scheme of making it a routine practice for two persons to check the filtration before treatment with filtered rays is started.

In a paper read some months ago before the American Roentgen-Ray Society, MacKee and Andrews enumerated the various skin diseases which are favorably influenced by intelligent application of the roentgen-ray. They are as follows:

List of diseases treated with Roentgen-Rays or Radium:

Acanthosis nigricans
Acne variolifórmis
Acne vulgaris
Actinomycosis
Addison's disease
Angioma, cavernous
Angioma, senile
Angioma, strawberry mark
Blastomycosis
Bromidrosis
Carbunculus
Cheilitis exfoliativa
Cheilitis glandularis
Callositas
Cornu
Dermatitis, infectious eczematoid
Dermatitis exfoliativa
Dermatitis papillaris capillitii
Dermatitis venenata
Epithelioma, basal cell
Epithelioma, multiple benign
Epithelioma, prickle cell
Erythema induratum
Favus, of the scalp
Folliculitis decalvans
Furunculosis
Granuloma annulare
Granuloma fungoides
Granulosis rubra nasi
Hodgkin's disease
Hyperidrosis
Hypertrichosis
Intertrigo
Keloid
Keratosis
Keratosis follicularis
Kraurosis vulvae
Leukemia cutis
Leucoplakia
Lichenification
Lichen planus
Lichen scrofulosorum
Lupus erythematosus
Lupus miliaris disseminatus
Lupus vulgaris
Lymphangioma circumscriptum.
Lymphangitis, chronic streptococcic
Lymphogranulomatosis cutis
Neurodermatitis
Nevus pilosus
Onychomycosis
Paget's disease
Parapsoriasis lichenoides
Paronychia
Pernio
Pityriasis rosea
Pompholyx
Prurigo
Pruritus
Psoriasis
Rhinophyma
Rhinoscleroma
Ringworm, eczematized
Rosacea
Sarcoid
Sarcoma, general types
Sarcoma, giant cell
Sarcoma, Kaposi
Scrofuloderma
Sporotrichosis
Sycosis, lupoid
Sycosis vulgaris
Synovial lesions of the skin
Syringoma
Tinea barbae
Tinea tonsurans
Tuberculide

Tuberculosis orificialis
Tuberculosis verrucosa cutis
Verruca vulgaris
Xeroderma pigmentosum

To this already formidable list I would add neurofibroma which from personal experience I have found to respond promptly to x-ray radiation as well as to radium. It may be said, in passing, that all the skin diseases mentioned are also favorably influenced by radium treatment.

The choice between the roentgen-ray and radium will usually depend upon the size, and to a less extent the location, of the lesion to be treated. Large or widely distributed affections are most conveniently handled by means of the roentgen-ray which can be made to exert its influence over a much greater surface area at one time. Small circumscribed lesions, or those so situated anatomically as to be practically inaccessible to the x-ray, I prefer to treat with the dermatological plaque of radium.

While there are many features in connection with the mechanical action of radiation on the skin which are not clearly understood, we know that absorption of the rays by cells of the cutaneous structure produces greater destructive change in pathological than in normal tissue. It is upon this foundation, i. e., the increased susceptibility of diseased tissues to radiation, that the therapeutic use of both the roentgen-ray and radium is based. The extent of the change produced in the tissue, other factors being equal, is in direct proportion to the amount of radiation employed, so that changes can be produced at will varying from what appears to be a very slight stimulation of the tissue to complete atrophy accompanied by fibrosis.

Radiation should never be used in the acute inflammatory stage of skin diseases. As a possible exception to this rule, however, may be mentioned the quite uniformly successful abortive treatment of furuncles and carbuncles. In general, skin lesions characterized by itching, induration, chronic infiltration, and neoplastic growth will be favorably influenced by the roentgen-ray. It also has a secondary favorable effect on certain conditions in which the likelihood of a prompt cure depends upon temporary removal of the hair.

Persistent itching, even that accompanying diseases of unknown origin, readily responds to two or three doses of one-fourth skin Holzknect. Itching lesions due to vegetable and animal paratites are exceptions to this rule as they are not benefited by roentgen-ray treatment.

Indurative lesions, such as acne, furunculosis, etc., are usually improved by roentgen-ray treatment and resolution is hastened.

Diseases characterized by chronic infiltration, most common of which are lichen planus, the chronic eczemas and psoriasis, are amenable to roentgen-ray treatment.

Neoplasms, and to this general classification I may well add those skin lesions which are now recognized as pre-cancerous, are readily eradicated by radiation. Whether one chooses the roentgen-ray or radium will depend largely upon individual features of the case to be treated. Oftentimes excellent results may be obtained with either agent.

In some forms of ringworm of the scalp the x-ray is used as a depilatory agent. In such cases radiation has no direct effect upon the disease, but cure depends upon temporary removal of all hair in the affected region. While depilation is intended to be temporary obviously it is essential that accurate and carefully measured dosage be employed to prevent injury to the skin.

A few years ago I became greatly interested in the treatment of skin malignancies by radiation, and results obtained have been uniformly satisfactory. Unless the lesion has progressed to the stage where bone or cartilage is involved, or extensive internal metastases have ensued, the percentage of cures is almost 100 per cent.

At the present time we have gone a step further in our therapeutic study of skin malignancies, and are devoting more especial attention to the treatment of pre-cancerous lesions. In other words, we are endeavoring to prevent the development of cancer. Personally, I believe every individual of sixty or even fifty-five is under constant suspicion of being a cancer subject, potentially at least; and if persons of that age would apply for routine physical examination at least once a year, so that degenerative or pre-malignant changes in the skin could be discovered and adequate treatment instituted, never again would he be called upon to witness the terribly distressing, painful, extensive, foul, ulcerating skin cancers now occasionally observed and which present such a hopeless problem from a remedial standpoint.

DISCUSSION

C. B. Wilmott: I have certainly enjoyed Dr. Young's most excellent paper, and he has evidently made quite an extensive study of the roentgen-ray as a therapeutic agent. One of the most important factors mentioned in his paper, it seems to me, is the accurate measurement of the dosage. In treating tinea tonsurans, for instance, to secure proper results and avoid destruction of the hair follicles, it is absolutely necessary that only a certain dosage be used, about one and a quarter units. This is the average skin dose and when applied to the surface merely

produces an erythema such as would occur from a slight sunburn.

While in the Vanderbilt Clinic, New York, I treated numerous cases of ringworm of the scalp. This work was done in connection with Dr. Remer who figured mathematically the proper dose for the skin in these cases. He told me when I was there, two or three years ago, that they had never yet had a case of permanent destruction of the hair follicles. Every dose of the roentgen-ray applied is accurately measured. If too large doses are used the hair follicles are destroyed, the hair never would return, and the child would in consequence be a baldhead. I say child, because we find these cases only in childhood, very seldom after puberty.

I think there is a tendency among certain men who have x-ray machines to use this agent indiscriminately without proper study of their various types of cases. I had an interesting case not long ago, one of simple ringworm of the body; the patient had been treated by a certain physician in this city who used the roentgen-ray, unsuccessfully, I may say. The physician who referred the child to the roentgenologist finally brought him to me and by the application of simple ointment a cure was obtained in ten days.

In my opinion the roentgen-ray should never be used if the disease can be cured by the application of drugs. The x-ray is a dangerous agent in unskilled hands, and even those of us who are most familiar with it are sometimes prone to forget or neglect some part of the technique as stated by Dr. Young. In using the roentgen-ray it is my custom, after everything has been arranged, to re-check to see that nothing has been left undone, that the distance is correct, that the filters are in proper position, etc. I have seen one or two very serious burns from the x-ray during the last two years. They are usually produced by operators not especially trained in this method of therapy.

One of the main points which impressed me in Dr. Young's paper was his emphasis of the fact that the roentgen-ray can be used therapeutically in skin diseases with safety and success. The methods of roentgen-ray therapeusis have been so standardized that the dermatologist is not apt to produce any permanent change in the skin in his treatment of skin lesions. There are no results in dermatology which can be obtained, with as much satisfaction both to the patient and the attendant, as in the treatment of lesions which respond to roentgen-ray therapy. The field of such therapy has become established, it is definite, and as has been stated the x-ray is a most valuable adjunct in the treatment of skin diseases.

B. W. Bayless: There is considerable difference in the way the skin reacts to the roentgen-ray in blondes and brunettes. The latter can stand much more than the former. With the soft rays an erythema is produced much quicker than with filtered rays.

I recently treated a young girl for carcinoma of the femur with the roentgen-ray. The first series did not produce the relief expected and the second series was given a little sooner than was advisable. Within two weeks she had considerable dermatitis with exfoliation of the skin but no ulceration. The heavy machine was used with filtration through copper, yet she had some dermatitis and exfoliation. Without the filter there would have been considerable ulceration and scarring of the skin.

The skin of the child is much more sensitive to the roentgen-ray than that of an adult, in other words children do not stand the x-ray quite as well as elderly people. It must be remembered that the roentgen-ray has no effect upon bacteria, yet in certain lesions such as Dr. Young has mentioned, carbuncles and furuncles, this agent seems to have a beneficial effect by its local reaction but has no effect on the bacteria. In eczema a good effect is produced on the area that is exposed, also some areas at a distance not exposed are favorably influenced. Many skin lesions, pruritus, etc., are at times quickly relieved by the roentgen-ray, but at other times brilliant results are not secured.

Leon K. Baldauf: The only comment I have to make about roentgenologists who claim to cure cancer of the skin is this: I do not believe they differentiate between skin growths that originate in the specialized epithelial cells so-called and those starting in the basal cells. One of them is decidedly more malignant than the other, and so far as my experience goes in the few cases I have had treated by the roentgen-ray I have been impressed with the fact that the rodent ulcer type of growth responds to treatment decidedly more than the squamous type. I think people get the impression that these more malignant growths of the skin about the face respond to treatment equally as well as the rodent ulcer type.

I have had some rather unfortunate happenings with radium. I have seen several malignant tumors of the jaw and face, and have not noted the brilliant results in these cases that have occurred in rodent ulcer. We know that rodent ulcers disappear rather quickly and apparently permanently under roentgen-ray or radium treatment, whereas in the more malignant type it is problematical whether much good is accomplished or not.

Wm. J. Young (closing): So far as idiosyncracy of the skin against radiation is concerned: Just as Dr. Bayless has said, blondes are more susceptible than brunettes. We are prone to speak rather glibly about idiosyncracy of the skin when unexpected results are secured, but I do not believe it to be a large factor. When un-

favorable results are obtained the chances are it is because of some fault with the technique of the operator.

In regard to filtered and unfiltered rays: By using filtered rays we are assured of a greater margin of safety. Unfiltered or soft rays are more penetrating and more likely to cause a burn. That is the reason why the placing of the filter is of especial importance with the large x-ray machine. In administering a therapeutic dose with the big machine in deep therapy of course whenever we forget the filter a third degree burn is produced which may never heal.

Neither the roentgen-ray nor radium has any effect upon bacteria whatsoever. When I was in the New York Skin and Cancer Hospital I did some experimental work along this line. We took different cultures and subjected them to high doses of x-ray and no effect was produced. However, when a lesion in which bacteria are present is treated by radiation we change the habitat of that portion of the anatomy whereby bacteria do not flourish to the extent that formerly obtained.

What Dr. Baldauf said about basal cell and squamous cell epithelioma is absolutely correct. There is no question about it and everyone who has done any work in this line knows that basal cell tumors are easily influenced, whereas squamous and prickle cell growths are very difficult to influence by radiation. In basal cell growths we feel very positive of producing a cure, but in the more malignant types we are not so certain. Of course the only way to differentiate between the two types is to resort to biopsy and microscopical examination. However, if one has seen a great many epitheliomata of the skin I believe he can differentiate clinically between the various types without much trouble.

I remember in the New York Skin and Cancer Hospital in one year we had one hundred and forty-seven cases of epithelioma of the skin on our side and they had about the same number on the surgical side. In other words, all the patients with epithelioma came through the skin side for determination of the various types. We obtained all the basal cell types for treatment with the roentgen-ray; all the squamous cell types went to the surgical side. These cases were all followed to the pathologist for diagnostic confirmation. I think we can determine clinically which is which in the majority of instances; we can determine in this way about the same percentage as the pathologist can from his macroscopical examination of the tissues. The pathologist does not often make a mistake in his macroscopical examination in such cases.

The reason we believe x-ray or radium radiation is preferable to the knife is that we include a wider margin beyond the border of the epithelioma. The surgeon at times cannot include that margin without sacrificing too much tissue, too much skin, or producing an unsightly deformity. The recurrences I have seen were about equal with the knife and with x-ray or radium. Recurrences following use of the knife are usually in the center showing that the surgeon does not remove enough skin in making his elliptical incision; whereas following radiation recurrence is usually in one corner of the scar, and it is a circular smooth scar when properly radiated. When there is a recurrence in one corner of the scar it merely shows that radiation did not extend far enough.

Where there is infiltration and the type of tumor is squamous cell epithelioma I believe the knife should always be used. Even in these cases, however, radiation after surgical intervention is of benefit in preventing recurrence.

About exposing the patient: In treating skin lesions we are careful to protect the surrounding skin. Irrespective of how large or how small the lesion may be, we exercise particular care to protect normal skin adjacent to it. We never subject the normal skin to the action of the x-ray or radium.

As to the treatment of carbuncles, boils and furuncles: I have had very little experience in the treatment of carbuncles by radiation, but those who have used this method claim great success. I have had some experience with boils and folliculitis, especially with boils in the axillary region. I have no doubt all of you have seen many cases where the patient has boil after boil under the arm. The treatment of such cases is very interesting; it is along the same line as the treatment of ringworm of the scalp; the patient is given the proper dose to remove the hair; this is just short of an erythema dose which will cause the hair to fall out. The hair remains out for two or three months and during that time it is an easy matter to cure the boil because the hair follicles are free, and any slight infection readily subsides.

With reference to pruritus ani: There is nothing comparable to the roentgen-ray in the treatment of this annoying affection, but I have always contended that in pruritus ani there exists some pathology higher in the rectum which acts as a cause, and certainly if we expect to produce cure we must first remove the cause. I have had some experience in the treatment of pruritus ani in conjunction with a prominent proctologist, and excellent results were secured. I treated the skin outside with the roentgen-ray and he looked after the pathology higher in the rectal canal. I have never yet seen a case of pruritus ani that did not respond to x-ray radiation. I have treated a number of cases with permanent results. Weekly doses were given over a period of two months and the cure is often permanent. I know of nothing that compares with the roentgen-ray in the treatment of such cases.

In psoriasis permanent results cannot be promised and the most that can be said is we do not

know anything about it from an ethiological standpoint. Everyone understands that no matter how psoriasis is treated it is likely to return in six weeks, six months, or six years irrespective of the method used. On the other hand, I do not know of any agent that we have in medicine that will cause psoriasis to disappear as quickly as the roentgen-ray. I have treated a few cases of this character. I recall one patient in particular who was literally covered with psoriasis; he was given eight treatments during seven weeks; it took two and a half hours to radiate the entire body. The psoriasis disappeared promptly, but within six weeks he returned in the same condition as before. I have seen a few cases like that where the disease recurred promptly, and when this happens I do not believe it a good plan to continue treatment with the roentgen-ray. However, this agent is vastly superior to chrysarobin or various other salves for local application which keep the skin continually dirty, sticky and renders the patient more uncomfortable.

The main reason for writing my paper was to emphasize the fact that the roentgen-ray is one of the most valuable adjuncts we have in dermatological work, but it should be used by those who are capable and have had training and should be able to differentiate between the various skin affections and decide which of them should be treated by this means. Accurate diagnosis is of paramount importance. I do not suppose I treat one-fourth of my dermatological cases with the roentgen-ray. In those cases which are suitable for this method of treatment the roentgen-ray is certainly the most satisfactory agent of which I have knowledge. If one exercises proper care there is no danger of producing a burn. In the removal of a neuroma an erythema dose is given which produces practically no change in the skin whatsoever. Neuromata are very susceptible to radiation; fibromata are more resistant.

In acne vulgaris good results are secured with the roentgen-ray but it is unnecessary to treat every case of acne by this method. The type of acne in which there are pustules underneath the skin respond readily to the roentgen-ray. In simple or superficial cases of acne vulgaris good results are produced by the various lotions without roentgen-ray treatment.

We all know there are cases of eczema which respond to the roentgen-ray when every other means has failed.

Treatment of Typhus.—Modinos admits that Proteus X is not involved in the causation of typhus, but the fact that it is agglutinated by typhus serum suggested that it might serve for vaccine therapy. His experience in twelve cases of typhus with such a vaccine demonstrated, he says, that it certainly attenuated and shortened the disease, and warded off complications, even in the gravest cases.

WHAT SHALL WE DO WITH THE CROSS-EYED CHILD?*

By Adolph O. Peingst, Louisville

The varied advice given parents of cross-eyed children is the incentive for a paper which is to deal with the management of squint. At the outset I would ask the members of the society who are specializing in ophthalmology to bear with me, if, in my endeavour to present my subject lucidly to those not actively interested in eye diseases, I treat with facts apparently commonplace.

For the proper understanding of squint we must bear in mind that under normal conditions both eyes are concerned in the act of vision and that the image focused on the retina of each eye is made to fall on symmetrical points—the fovea centralis of the macula lutea—by changes in the direction of the visual lines of the eyes, the result of activity of the external ocular muscles. These two images are fused into one. The innervation of the motor apparatus causing this constant collaboration which brings about and maintains binocular single vision, is believed to arise in a special "fusion center" in the brain, whose definite location has as yet not been determined. When the visual lines of the two eyes are not directed towards the same object, the condition of squint prevails and the images fall on asymmetrical points of the retinae. This may result from paralysis of one or more of the ocular muscles in which event it usually occurs in adult life and comes on suddenly and as a rule with rather stormy symptoms. However, I do not wish to dwell upon paralytic squint but will confine my discussion to that form of strabismus which is known as concomitant squint, the ordinary "crossed eye" of childhood. As it is not my desire to enter into the technical details of strabismus the rarer forms—the vertical and oblique—will be omitted and our discussion confined to the convergent and divergent varieties.

In order to appreciate thoroughly the principles involved in the management of squint, it becomes necessary to review a few facts regarding its cause. It is believed that improper co-ordination may be due entirely to faulty development of the fusion center. In such cases, regardless of the amount of vision in each eye and regardless of the degree of refractive errors present the eyes fail to act in unison. However, the fundamental cause of concomitant squint in the great majority of cases is the over or under stimulation of one or the other of the extrinsic ocular mus-

*Read before the Alumni Association of the University of Louisville June 4, 1923

cles, a direct result of errors of refraction. The activity of the ciliary muscles, which is known as accommodation and by virtue of which the lens is enabled to bring to a focus and sharply define images entering the eye from any distance, takes place in both eyes simultaneously. The innervation of the internal recti muscles to bring about convergence is always analogous with that of accommodation and takes place in direct ratio with this act and hence it is necessarily applied to both muscles simultaneously. If we stop to consider that every time we accommodate a stimulus is also sent to the adductor muscles (muscles of convergence) and that the far sighted eye is accommodating to see clearly far objects as well as near objects, you will readily understand why the internal recti in such cases usually become overdeveloped and often result in convergent squint. I say recti for I would correct the erroneous impression of some that concomitant squint is a unilateral affection when actually both internal recti are involved, even though the error becomes manifest in but one eye. This can readily be demonstrated by testing the horizontal excursion of both eyes in these cases. On the other hand we can also appreciate why near sighted (myopic) eyes, which accommodate but little even when looking at close objects, and hence bring about very little stimulation of adduction, should frequently be associated with under development of the internal recti and consequent divergent squint.

Just what relation the defect in vision bears to the development of squint has been the subject of much discussion, beginning with Von Graefe's theory that the amblyopia is the result of non-use subsequent to the development of the squint—the so-called amblyopia exanopsia—to the present idea strongly fostered by Landolt that the amblyopia is the cause rather than the effect of squint. Certainly it is an indisputible fact that blind eyes show a great tendency to deviate from the line of fixation as is evidenced in the frequency of divergent strabismus in eyes that have become blind.

Long before concomitant squint becomes manifest, a latent condition or tendency to strabismus known as heterophoria prevails. This may be transformed into a manifest squint when children begin to use their eyes for close work as in drawing, looking at picture books, etc., hence we find that most cases of squint, especially the convergent type, give the history that they were first noticed between the second and fourth years of life. Sometimes the latent squint becomes manifest suddenly, following illness with resulting general weakness, after convulsions associated with deranged system or after emotions of joy or fear. A great many causes of this kind could be enumerated such as falling down stairs; of seeing some deformed persons; of witnessing an accident, etc. Most cases of concomitant strabismus when once they become manifest remain so constantly, although cases of periodic squint are not uncommon. It is the rule for the same eye to cross habitually though alternating strabismus, where one and then the other eye deviates, is not uncommon. In ancient times superstition had it an "evil eye." This has evidently led to the prejudice which still exists against the unfortunate cross eyed individual. Many a child with a turned eye becomes conscious of the disfigurement and as a result becomes shy and unable to look its fellow begins squarely in the face. This diffidence combined with the established prejudice against the forbidding appearance in these cases militates against their progress in commercial and social life, hence these cases should appeal to our every effort to aid them in overcoming this handicap. It may interest you to know that in early times the endeavour was made to cure squint by having the afflicted child look through small openings in opaque discs. One of the earliest books on eye surgery which was published by Bartisch, a barber surgeon of the 16th century, contained illustration of stenophoic or perforated spectacles, employed at that time in the treatment of squint, it is needless to say with little or no success. It is not unusual for mothers of strabismic children to be given the advice, and I am sorry to say, even at times by their physician, to "let the child outgrow it." While spontaneous cure is possible, such cases are the rare exception and would offer no argument in favor of allowing cases of squint to trust to luck rather than to have them examined and treated according to scientific principles. We should know that the earlier this is done the more apt we are to attain muscle balance and to correct thereby the disfigurement.

The first and most important step in the management of strabismus is to determine accurately the errors of refractions and to prescribe glasses where such seem to offer a hope of relief. The object of lenses is a two fold one—first, to augment the visual acuity of the weak eye which is usually accomplished to a considerable degree, especially in cases of high degree astigmatism. The improvement in vision acts as a stimulus to the deviating eye to fix objects. However the chief aim of glasses in cases of strabismus is to modify the amount of accommodation. In the far-sighted converging eye it is our endeavour to overcome the spasm of accommodation by neutralizing the absolute amount of hypermetropia through the use of lenses which reduces

the accommodation to the level of the ametropic eye and thereby lessens the amount of convergence. To determine the absolute error of refraction it becomes necessary to examine the eyes while under the influence of a strong cycloplegic agent of which atropine is the representative. I cannot refrain from emphasizing this point and of impressing the importance of not entrusting cases of squint to the optician who is incapable of determining accurately the amount of ametropia but to insist upon a consultation with an experienced oculist.

As patients do not readily adapt themselves to glasses representing full or almost full correction of the refractive error, it is the custom of most oculists to keep the children, who are beginning the use of glasses, under the influence of the cycloplegic agent for several weeks. The object of correcting errors of refraction in the nearsighted divergent eye, in addition to improving visual acuity, is to make it as near the normal eye as possible and to stimulate thereby the act of accommodation, especially when looking at close objects. Through the innervation of the adductors which is analogous to accommodation these muscles are strengthened. In either form of squint the constant use of the glasses should be insisted on.

In the management of convergent squint several auxiliary treatments may be instituted. Of these the one of most probable merit is the occlusion of the fixing eye several times during the day with increasing duration, to force the crossed or weak eye to work. This is best accomplished by merely placing a wad of cotton under the spectacle frame on the side of the good eye. Another method of forcing the crossed member to work, but this only when it is looking at close objects, is to keep the muscles of accommodation of the fixing eye inactive by the daily use of atropine for several months, and thus forcing the use of the squinting eye for all close seeing in which the power of accommodation is essential. While I employ both of these methods in all cases of convergent squint that do not straighten soon after glasses are used, I must frankly admit that I cannot point to a specific case in which I have seen marked results from either treatment.

As a further auxiliary treatment of convergent squint, I would mention socalled orthoptic training of binocular perception by the use of the stereoscope or amblyoscope. By increasing the illumination of the object seen with the squinting eye, simultaneous perception is brought about, the fusion sense developed and blending of the images made possible. This method of treatment is not generally looked upon as one of practical value.

Knowing that early application of conservative treatment offers the squinting child the best chance of obtaining muscle balance, the employment of glasses is theoretically indicated as soon as the squint becomes apparent. However, this can hardly be put into practical use as children under three years of age are seldom submissive enough to adapt themselves to the wearing of spectacles. While I have in several instances put glasses on children successfully at two and one-half years, it is my rule to wait until the child is somewhat older and more manageable (usually three or three and one-half years). A large proportion of squint cases yield to conservative treatment and I feel sure that the number could be increased if more cases were given the advantage of early and proper treatment. Unfortunately many cases, either through carelessness or through poor advice, are neglected until the child is eight or ten years old, when, in consequence of the long duration of the defect, optical treatment is of little or no avail.

In the cases in which conservative treatment fails to bring about the desired cosmetic affect, surgical intervention is the only alternative. The earlier operators for crossed eyes tenotomized the muscle which was rotating the eye in the direction of the deviation. The tenotomy as it was first performed by Diefenbach in 1839 had as its object a division of the muscle proper. This was very frequently followed by an over correction or rather by the development of a squint in the direction opposite to the original deviation. Twenty years later Van Graefe found that by severing the tendon at its attachment to the sclera this secondary overeffect did not occur nearly as often as when the muscle proper was divided and hence tenotomy of the tendon became the recognized operation for strabismus. But notwithstanding careful and correct surgery, it happened not infrequently even after a tenotomy that the severed muscle retracted excessively, giving it a new attachment far behind its original insertion thus allowing the antagonist to draw the eye in the opposite direction. The modern tendency is to supplant the old idea of weakening the strong muscle by tenotomizing it by the more rational idea of reinforcing the inefficient muscle. This may be accomplished either by what is known as an advancement, which consists in detaching the weak muscle and reattaching it to the sclera closer to the cornea than its original insertion, or by what is known as a resection which consists in the removal of a piece of the muscle and reuniting the free ends or by a combination of the two principles. The choice of the operation depends upon the degree of squint and in my judgment also largely upon the degree of

limitation of the excursions of the eye in the direction of the weak muscles.

Operators are doing less tenotomies all the time, and yet I believe that there is still a place for the operation when properly done in the cases of excessive convergence. I say this even though I have had some undesirable results following tenotomy which have influenced me in employing it in only a limited number of cases. For example, the picture of the child on the screen had a 55 degree convergent squint; after a tenotomy of the internus and advancement of the externus under a general anesthetic, a marked divergence developed. This child will now have to have his internus readvanced. Had this operation been done under a local anesthetic, the result could have been modified at the time of the operation as was done in a recent case of convergent strabismus in which the combined operation caused over correction. As this operation was made under local anesthetic the over-correction was apparent at once, hence a loop of thread was passed through the belly of the divided muscle and this drawn forward to a point as near as possible to its original insertion through a conjunctival anchor. You will note that the result was perfect. The principle of strengthening the weak muscle offers manifest advantages over the tenotomy. Primarily it lessens considerably the danger of bringing about the over-correction that is seen in cases of tenotomy in which the divided muscle is set back excessively. Furthermore, it increases the motility of the eye in its lateral excursions rather than lessening it. The disfigurement of a sunken carnucle or of a protruding eye which are frequent sequelae of a tenotomy do not occur in the other operation. In my judgment tenotomy should never be practiced in divergent strabismus; first because it would not bring about the desired correction and secondly, because it frequently increases the forward displacement of the eye (exophthalmus), which already exists in most myopes in whom divergence develops. In divergent cases advancement of both internal recti usually becomes necessary to secure parallelism. The danger of over-correction in these cases is almost nil. I have never seen a case of divergent strabismus converted into one of convergence by an operation.

While a discussion of the various methods of advancement and resection would lead us beyond the limits of a paper of this kind, I would endeavour to point out the principles involved in the two operations. In a resection the insertion of the rectus muscle is not displaced—a portion of the muscle merely being removed and the free ends reunited. Many methods of resection have been suggested, varying accordingly, as the tendenous end of the muscle or part of the belly of the muscle is removed and as to the nature of the sutures employed. The method of Reese is at present, the popular operation of resection. Advancement, which to me seems more efficient than the resection as it increases the extent of the muscle on the globe, has for its aim the severing of the tendenous attachment to the sclera and suturing it farther forward nearer the cornea. Quite a number of methods of advancement have been introduced, all of which have the same aim. I have in the last four years employed almost exclusively the advancement as it was originally outlined by Wiener. In brief it is carried out as follows:

Vertical conjuntival incision 3-4 mm. away from corneal margin; dissection of conjunctiva backward in order to expose field of operation; snipping of Tenon's capsule; introduction of two squint hooks under the tendon to put it on the stretch. Thread is double armed (Corticello black silk, size D) and the needle passes through the eyes of the plate and then through the conjunctival flap near its margin. It is then passed through the muscle by passing the needle transversely from its center outward. One is passed upward and the other downward, emerging at the margins of the muscle. The tendon is then severed from its scleral attachment. The needles are passed under that portion of the conjunctiva next to the cornea and through the episcleral tissue and are brought out as near the edge of the cornea as possible—about 4 mm. apart—and a second plate is introduced on the threads. By tying the threads the plates are approximated and the muscle is advanced, the amount being regulated by the amount of approximation of the plates, or, in other words, by the degree of tightening of the knot. The conjunctival edges approximate and do not need an additional suture. This method combines simplicity of technic with the ability to obtain firm anchorage of the distal sutures and does not, as a rule, sacrifice any of the muscle tissue. The plates largely prevent the threads from cutting out of the tissue at their point of anchorage and by their position over the belly of the muscle do away with the necessity of tying of the muscle. The amount of shortening can more readily be regulated in this operation, if done under a local anesthetic, by tightening or loosening the knot according to the effect desired. The simplicity with which the sutures can be removed is a favorable feature of the operation.

Many operators advance both weak muscles in all cases of squint on the principle that squint is a binocular affection and that the deficient muscles are practically equally weak. Landoldt is the champion of this procedure.

However, I have not found it necessary to advance the weak muscle of both eyes as a routine as the operation on the squinting eye is usually successful. It is my custom in the high degree squints to resect a small portion of the tendonous end of the muscle before advancing it, using a combined method. In those cases in which the advancement of the one muscle does not fully correct the deformity, the corresponding muscle of the other eye may be advanced at a later period.

In cases of alternating strabismus which seem to depend on failure of the fusion sense development and which are least amendable to surgical treatment, advancement or resection nearly always has to be done on both of the weak muscles.

I have selected for demonstration on the screen from quite a large number of cases of strabismus which were treated surgically, a few that will exemplify some of the conditions alluded to in my paper.

BRONCHIAL ASTHMA.*

By W. Z. Jackson, Arlington

A chronic affection, characterized by paroxysmal dyspnea, due to contraction of the muscles of the bronchioles.

In many cases there is hyperemia of the bronchial mucosa, and also a characteristic exudate of mucin. In others there may be no lesions whatsoever. The morbid changes peculiar to chronic bronchitis, pulmonary emphysema, and right ventricular hypertrophy with dilatation are found at autopsy.

Meltzer, in 1910, first called attention to the possibility of asthma being a manifestation of anaphylaxis. The older theories of this disorder have been generally discarded. The most generally accepted of these theories was that the condition was a neurosis which, by various means and as a result of various conditions, produced a stenosis of the bronchioles with the resulting inability to exhale the intraalveolar air. In asthma a spasm of the bronchioles does occur, not as a neurotic phenomena, but as an evidence of protein poisoning. This can be experimentally shown in guinea-pigs, the protein injection causing contraction of the smooth muscle generally, but more particularly in that of the bronchi which are so thrown into folds as to completely occlude them. In a certain number of asthmatics an attack may be instigated by a known substance, as horse emanations, pollen of plants, egg albumen, and so on. The anaphylactogen by which the patient is sensitized may be apparently almost any type of protein. Wells and Osborne have shown the multiplicity of plant proteins that exist, as well as the previously recognized numerous animal proteins. Bacteria probably are frequent liberators of anaphylatoxins, if one may judge from the frequent reports of cases of asthma cured by vaccines. Such bacteria may be harbored in the nasal passages as a result of pathologic conditions present, or in the trachea and bronchi or even in the intestines.

Hyde Salter's collective statistics show that prodominal symptoms appeared in about one-half the instances (in 111 out of 226 cases). They differ, but are nervous in most cases, and appear as irritability of temper, either depression or unusual bouyancy of spirit, headache, drowsiness and vertigo. Abundant diuresis and digestive disturbances may be seen.

The paroxysm usually comes on in the night during sleep, and at a definite time. It may develop while awake, but rarely, during the day. The onset may be sudden, but perhaps more frequently the patient first experiences a moderate grade of dyspnea and thoracic constriction. This augments with unwonted rapidity, and often attains to an inordinate degree, until the patient feels smothered, sits up, grasps his knee with his hand, or places the palm upon the bed so as to raise the shoulders and thus reinforce the accessory muscles of respiration.

When the attack is severe, he rushes to an open window if he is able to leave his bed, or sit on a chair and place his arms on the back of another chair, so as to fix the shoulders and thus give purchase to the auxiliary muscles of respiration while frantically endeavoring to maintain the act of breathing. The face is pale, anxious, and soon bedewed with cold perspiration, while the lips, eyelids, and finger tips are livid, owing to defective oxygenation of the blood. The temperature is subnormal and the pulse feeble and rapid. The clinical picture wears an alarming aspect. Inspection shows enlargement of the chest, which in the advanced stage becomes barrel shaped. The reason for this is the presence of an increased amount of air in the thorax with a total inability to expel it. The respirations are diminished in frequency to 10 or 12 per minute. The natural rhythm is also greatly disturbed, and inspiration is seen to be short and gasping, and followed immediately by greatly prolonged expiration. The expansion movement of the chest is very limited. There is lowering of the diaphragm. Palpation is negative in its practical results. Percussion yields a hyperresonance; in advanced cases with associated emphysema semitympanic resonance is common. On auscultation inspiration is found to be short and feeble, and expiration much prolonged and accompanied by a low toned wheezing sound that may be audi-

*Read before the Carlisle County Medical Society.

ble to onlookers. A great variety of dry rales are heard, chiefly high pitched, sibilant, sonorous, that are more marked on expiration than inspiration. They also change their character and situation frequently. At the close of the attack moist rales may be heard, and occasionally, when bronchitis complicates asthma, the moist rales may be combined throughout the paroxysm. The duration of the attack is various, ranging from a few minutes to several hours. Though it may last a week or two, with spontaneous remission during the day e.g. when chronic bronchitis coexists. Usually it subsides abruptly, with the expectoration of rounded gelatinous masses and, later still, of mucopurulent material. The former, when floated in water, are found to be composed of the so-called Curschman's spirals, and the spiral character of these small, ball-like pellets may even be detected with the naked eye.

Diagnosis: A clear history, together with the physical signs and a microscopic examination of the sputum, should lead to correct diagnosis. The history is alone inadequate to put the physician upon the right track. Laryngeal affections, which give rise to spasm of the glottis and dyspnea, are excluded by the hoarseness and aphonia which are usually present, while the characteristic physical signs of asthma are absent. Again, the dyspnea is inspiratory, not expiratory, as in asthma. Emphysema may be confounded with asthma. The presence of recognized causes, of typical physical signs, and the paroxysmal dyspnea in asthma are the chief points of distinction from emphysema. The sputum should be examined microscopically if doubt remains. The so-called cardiac asthma is distinguishable by the presence of chronic nephritis with oncoming failure of the left ventricle.

In mild cases of asthma there may be but one or two nocturnal paroxysms, with entire freedom from cough and dyspnea during the following day, while in severe ones there is a repetition of the paroxysms from three to five or six nights. Under these circumstances in the intervals there are slight wheezing and some cough. In long standing cases asthma leads constantly to the development of chronic bronchitis and emphysema, hence these affections are often combined. The paroxysmal character of the affection is often partly or wholly lost, the patient rarely being entirely free from asthmatic dyspnea, combined with cough and mucopurulent expectoration. The periodicity of the attacks varies; in some it occurs monthly or at shorter intervals, and in others only annually.

There is rarely any danger of life, except when the secondary affection is emphysema, and its remote consequence is dilation of the right ventricle; but the percentage of cases in which recovery actually takes place is comparatively small, since the affection may reappear long after the paroxysms have ceased to recur in the usual manner.

Treatment: The indication for treatment are (1) to cut short the paroxysms and (2) to prevent a recurrence of subsequent attacks. To bring relief during the paroxysms we should ascertain the exciting cause, and remove it promptly if possible to do so. To cut short the paroxysms; Adrenalin has been shown experimentally to relieve bronchoconstriction, and will very frequently cut short an attack of asthma. It must be given subcutaneously (0.5 to 1.0 c.c. of 1:1000 solution) or may be dropped in the nose if a physician is not convenient to give the hypodermic. Adrenalin by the mouth is valueless. With this it is frequently advisable to give a hypodermic of morphin for its soothing, relaxing, and sedative effect, as one of the chief features of the cases is the dread and fear of the patient of an attack. Atropin is another drug that has a very distinct antianaphylactic effect. It is best combined with the morphin and given hypodermically. In order to prevent further attacks it is sometimes possible to desensitize the patient by means of autogenous vaccines or antigens.

Babcock prepares the vaccine from cultures taken from some point of local infection; Laskowitz, basing his idea upon the works of Sanford in the Mayo Clinic, removes the intratracheal secretions by aspiration, boils it down, and from this prepares a standard solution for injection: Goodall produces immunity in the asthma of pollen-poisoning by extracts prepared from the pollen; Rogers prepares a vaccine from cultures of the sputum; Turnbull employs the cutaneous test to determine the grain protein which is specific to that individual, and then withdraws the exciting protein from the diet; Kahn on the basis that the offending protein is in the blood during an attack, withdraws 20 to 30 c.c. of blood into a sterile flask in which are a few beads, defibrinate the blood by shaking well, and then reinject it at once into the muscles of the loin. No matter what method is used to produce immunity, it is necessary, as a rule to give the sensitizing foreign protein in small doses over a long period of time.

The only drug besides atropin that has a distinct antianaphylactic effect, that is, can prevent anaphylactic phenomena, is calcium chlorid. It should be given intermittently in 1gm. doses four times a day over long periods of time—weeks and months. Pituitary extracts, for, its effect on the unstriated muscle, has also been recommended to be given over long periods.

MALARIAL BRADYCARDIA. CASE REPORT.*

By Ben Carlos Frazier, Louisville

Six weeks ago I was called to see a boy seventeen years old, a robust looking fellow, a football and baseball player. He was in school, and that morning complained of feeling ill. The mother told him to go to school and if he felt worse during the morning to return home. About noon he went home and the mother sent for me.

I found the boy in bed, he said he was feeling very well, but was extremely weak, he had some fever, but there had been no chill. On counting the radial pulse I found it was 42. His tongue was not coated and there were no other symptoms. I did not see him the next day, but the second day after that he had a similar attack of weakness, etc., coming on about the same time, with some fever but no chill. This made me suspicious of malaria. This patient last year had a typical attack of malarial fever with chills and other charaeteristie symptoms persisting many days. He was thoroughly cinchonized and all the symptoms subsided. Under the circumstances I felt sure he had another attack of malaria and believed this was the cause of his bradycardia. Under thorough einchonization the pulse rate inereased and the patient was apparently well after five days. Quinine was continued for thirty days and the boy has been perfectly well ever sinee.

Bradycardia due to malaria was something new to me and I thought the ease might be worthy of reeord.

DISCUSSION

Morris Flexner: I have seen little malaria in Louisville outside of that we saw at Camp Taylor where at one time we had two or three wards filled with boys from Arkansas who had true malaria. I do not recall having seen any bradycardia among them.

It is interesting to note in Dr. Frazier's case that bradycardia was relieved by the administration of quinine. We would naturally expect quinine to slow rather than increase the pulse rate. The combination of quinine with digitalis produces a much quicker effect than digitalis alone. I have seen that repeatedly in pneumonia. I recall one woman who can not take digitalis, the small amount necessary to give her any real benefit causing nausea, vomiting and diarrhea. She was given five to ten grains of quinine per day which satisfactorily regulated her cardiac mechanism. She has suffered with myocarditis for a year and during this time has been kept comfortable by the administration of quinine.

*Clinical report before the Louisville Medico-Chirurgical Society.

J. Rowan Morrison: I have seen two or three cases of bradycardia due to malaria. These were patients who came from the south during the autumn and had malaria the previous summer. The pulse remained around 50 for some time. When the malaria was relieved by quinine and the anemia overcome the pulse resumed its normal rate.

SINUS THROMBOSIS COMPLICATING MASTOIDITIS: CASE REPORT.*

By Joseph J. Wynn, Louisville

February 24th, 1923, I saw G. B., a male, aged nine years, with the following history: About two weeks previously he had a mild attack of influenza accompanied by some earache. A few days later the drum membrane ruptured and there was a free discharge of bloody serum. The earache was relieved but the discharge persisted and I was called to see him.

The patient's previous history was negative, except that I had removed his tonsils, also adenoids, in January, 1920, for the relief of repeated attacks of tonsillitis and earache. There had been no return of the ear trouble until the present attack.

Examination disclosed a perforation in the membrana tympani, and the canal was filled with pus. There was no tenderness or inflammation over the mastoid; the nose and pharynx were somewhat congested; the tonsillar fossae clean; temperature and pulse normal. There had been no pain since rupture of the drum membrane. Hot irrigations of saline solution ordered to keep the ear clean, and cargo-glycerine drops given for instillation into the canal.

February 26th, when I again saw him, his condition seemed to be about the same. There was no pain or inflammation over the mastoid, but slight tenderness was noted on deep pressure over the antrum; discharge from the ear persisted. The mother was instructed to continue the drops and report later.

March 2nd. It was reported that the child had a chill the night before, although he had not complained of any pain in the mastoid region, and there was only slight tenderness on deep pressure. Temperature 102 degrees F., pulse 110. A laxative and liquid diet ordered. The ear discharge continued.

March 3rd. He had another chill with high fever during the night. However, he had no pain and said he felt all right. Temperature 103 degrees F., pulse 120; discharge scanty and not of very foul odor; no pain but some tenderness on deep pressure over the mastoid.

Clinical report before the Jefferson County Medical Society.

March 4th. The child had a chill during the night. Temperature 104 degrees F., pulse 125; no pain or inflammation over the mastoid. The family physican was called to make a general examination; he found nothing to account for the chills and fever except the ear disease. We advised removing the patient to the hospital for mastoid operation, as we felt it must be one of those atypical cases sometimes seen without definitely indicative symptoms, this was refused by the family.

March 5th. He had another chill during the night. Temperature 102 degrees F., condition of ear and mastoid unchanged. Blood count (Dr. J. D. Allen) showed hemoglobin 75%; erythrocytes 4,000,000; leucocytes 17,000. Differential: 88% polynuclear, 9% mononuclears, 1% eosinophiles, 2% transitionals. Urinalysis negative for albumin and sugar; no casts present.

March 6th. The family consented to operation which was performed at St. Anthony's Hospital under ether anesthesia. The usual incision was made for a simple mastoid operation. The antrum contained a small amount of pus, the tip was exposed, and backward to the sinus the cells were found filled with granulations, but very little free pus. The sinus wall, which was exposed for a considerable distance, appeared to be normal. After proper cleansing the wound was packed and the boy returned to bed in fair condition. Pulse 140. By evening he had reacted well; temperature 97.8 degrees F., pulse 72.

March 7th. It was reported (Dr. J. D. Allen) that blood culture showed the streptococcus mucosus. The patient had a fairly good night. Morning temperature 97.8 degrees F. during the day. Wound dressed and had a chill and the temperature rose to 104 degrees F., pulse 130.

March 8th. He had a fairly good night. Temperature between 99 degrees and 103 degrees during the day. Would dressed and appeared all right.

March 9th. No change in his condition. Temperature 102.4 degrees to 104 degrees F., no swelling in neck. The next day he had a chill and the temperature rose to 105 degrees F., pulse 140. Blood count showed 15,000 leucocytes. Consultation was held with Dr. I. A. Lederman and we decided there must be a thrombus in the sinus to account for the high fever, sweats, and the optic neuritis which was developing.

March 11th. Second operation at nine A. M. Dr. George S. Coon made an incision in the neck downward to the external jugular vein which was ligated and divided. A cigarette drain was inserted and the wound closed. The mastoid wound was reopened and enlarged, the sinus being exposed from knee to bulb. A small incision was made into the wall of the sinus, and there was free hemorrhage from both ends of the vessel. A tight pack was inserted, the mastoid cavity packed, and the boy returned to bed in a very weak condition; pulse 160. By evening he had reacted and was feeling better; temperature 98 degrees F., pulse 112. The following day the temperature did not exceed 99.8 degrees F., and this was maintained until March 16th, when it rose to 103.8 degrees F., due to slight gastric disturbance from eating something which disagreed with him. The wound was dressed for the first time and everything found clean, except the wound in the neck from which there was a considerable discharge of pus.

March 19th. The patient complained of headache and diplopia when looking to the right. The wound was granulating nicely, but free discharge continued from the neck wound. There was still marked optic neuritis, with great distension of the retinal veins and some retinal edema, but he had no rigidity of the neck muscles nor loss of the superficial reflexes, knee jerk, pupillary, or ankle clonus.

March 22nd. Child improving; blood culture negative; leucocyte count 20,000. Urinalysis showed some albumin and a few hyaline casts. Temperature has not reached 100 degrees F., at any time since the second operation.

March 28th. Sitting in chair and eating well; wound granulating slowly.

April 3rd. Dismissed from hospital. The following day his temperature rose to 103 degrees F., due to a small pocket of pus that had burrowed in the neck. After evacuating this the temperature receded to normal and the patient gradually began to improve.

The mastoid wound is now nearly closed; the neck incision has entirely healed; the middle ear is dry and the membrana tympani healed. V. O. U. 20|30, but there is still some swelling of the dises and dilatation of the veins.

DISCUSSION

Gaylord C. Hall: Cases such as reported by Dr. Wynn are always of more than usual interest. The features outlined in the report are fairly typical of the average case of sinus thrombosis, viz., the middle ear disease does not improve, there may or may not be any marked mastoid symptoms; the patient has repeated chills with rise of temperature following, then a sharp decline accompanied by sweating. That is a typical picture of blood stream infection whether it originates in the ear or any other portion of the body. Under these circumstances, the thing to do is, as soon as consent can be obtained, immediate operation.

According to the report operation did not disclose complete thrombosis. The boy probably had a mural thrombus, and in some respects that is more dangerous than complete thrombosis, because an occluding thrombosis is nature's attempt to shut off the general circulation and prevent infection from bacteria which are swept into the blood stream. A mural thrombus will result in repeated throwing off of the infected material into various portions of the body. This would account for the repeated chills and rise of temperature with sweats in the case reported before operation.

There are several methods of dealing with these cases. I think the plan adopted by Dr. Wynn is probably more conservative and the safest in the majority of cases. In ligation and separation of the jugular vein I prefer to leave the supper end of the vein out in the neck rather superficially so that when, as happened in the case reported, you get suppuration in that area it is more easily drained than if the neck wound is closed completely. That method of dealing with such cases is to be preferred, in my opinion, to complete resection of the vein inasmuch as the latter adds to the gravity and duration of the operation in a patient who is already in a serious condition.

Another feature worthy of consideration in the case reported is that there was a streptococcic mucosis infection; it is notable that this type of infection results in far more pathology than is evident by ocular inspection of the wound. I think Dr. Wynn should keep his patient under observation for several months to see whether or not he has a localized abscess either in the temporo-sphenoidal or cerebellar region. Optic neuritis does not usually develop in sinus thrombosis which is complicated and it is important to determine whether or not this optic neuritis is due to intra-cranial pressure from brain abscess.

I hope Dr. Wynn will report later as to whether or not the optic neuritis subsides or whether his patient develops brain abscess.

A. L. Bass: Dr. Wynn certainly handled his case in a very satisfactory manner. The only change I would have made is that I would not have waited so long after the primary operation in a patient having chills, fever, sweats, etc., to thoroughly explore the sinus. We know that the streptococcus is one of the most virulent microorganisms. It does not always show as much pathology as some of the other bacteria, but is more serious in its results.

Octavus Dulaney: I would like to sound a note of warning in regard to the diagnosis of sinus thrombosis, i. e., one should not depend too much on the leucocyte count. In the case reported I understood Dr. Wynn to say the leucocyte count was 20,000.

One of the worst cases of sinus thrombosis that I have ever had to deal with had a leucocyte count of only 5,000. Dr. Wynn is to be congratulated on the successful management of his case, but as stated by Dr. Hall the patient should be kept under observation for several months to see whether brain abscess develops.

I had under my care not long ago a patient in whom sinus thrombosis was suspected. Patient gave history of discharging ear for ten years, but stopped discharging few months ago. There was nausea, vomiting and was in a semi-conscious state for three days before I saw him. At operation a tempora-sphenoidal abscess was found. Investigation revealed a cotton plug in the auditory canal impinging upon the tympanum and completely blocking this area.

RENAL CALCULUS.
CASE REPORT.*

By J. Garland Sherrill, Louisville

The specimen which I exhibit is a small so-called "mulberry" calculus removed yesterday from the renal pelvis of a man aged fifty who had suffered two attacks of severe renal colic. The urine had contained blood and pus, and the clinical diagnosis of renal calculus presented no difficulty. The roentgenogram showed the concretion to be slightly larger than the specimen presented, some small fragments having separated during removal.

After making an oblique incision through the loin and freely exposing the kidney the calculus was localized in the pelvis which was incised and the concretion removed with comparative ease. The incision in the pelvis was closed with catgut and a drain inserted to the suture line. I am hoping no urinary leakage will occur, but if it does nature will probably take care of it in due time. Before advent and perfection of the roentgen-ray the surgeon seldom saw patients with renal calculi in the early stages.

I wish to mention another case in which there was a very large calculus in one kidney and two small ones in the other. A full report of this case will be made later. The question arose whether to remove the small calculi from the best kidney at the primary operation, or to remove the massive calculus from the pelvis of the worst kidney. The physician in the case was asked to consider this and he said: "by all means do not operate on the good side first; if the patient should happen to die we would never be able to explain it; if you operate on the bad side first and the patient succumbs we can easily ex-

*Clinical report with exhibition of specimen before the Louisville Medico-Chirurgical Society.

plain it." Nephrectomy was performed as the renal structure was entirely destroyed, and the patient had a normal convalescence. The calculus is one of the largest I have seen. I am now debating what plan to pursue in regard to the other kidney which contains two small calculi. The probability is no further operative procedure will be permitted unless symptoms arise demanding attention.

The roentgen-ray, pyelogram and ureteral catheter have been the means of placing renal and ureteral surgery on a more exact plane than obtains in any other department of medicine. This applies alike to diagnosis, prognosis and treatment.

The question may be asked whether the calculus exhibited might not have extruded. I have seen calculi of this size expelled spontaneously, but such instances are rare. In this case operation was clearly indicated by the symptoms present.

DISCUSSION

Owsley Grant: It is known that many small renal calculi are extruded without treatment. The reminder seems important that there are three points of ureteral constriction. Whenever a calculus is engaged at the uretero-pelvic junction, by dilating the ureteral lumen from below it may sometimes be made to move downward, but it is still a problem whether it will be extruded on account of the ureteral constriction. When this occurs of course it saves surgery and distress to the patient.

Pyelotomy in a healthy patient is ordinarily not a serious operative procedure, but it may cause disturbance in parts supplied by the ileo-inguinal and ileo-hypogastric nerves. These nerves are sometimes avoided with difficulty during the operation, and even the stretching which occurs may cause considerable discomfort for a month or two afterward. Of course this increases the magnitude of the procedure.

When a calculus the size Dr. Sherrill has shown has engaged in the ureter an attempt should be made to cause it to pass. If unsuccessful after a moderate amount of manipulative effort, then it is better to operate and remove the calculus closing the pelvis as Dr. Sherrill did in his case.

C. W. Dowden: The existing theories in regard to the causation of renal calculi are so absolutely at variance that until we have some more definite knowledge it would be difficult to determine just what must be done to prevent them. Rosenow produced renal calculi experimentally by injecting infectious material into the blood stream. Others claim metabolic disturbances favor the precipitation of urinary salts and thus cause calculi. Slight trauma of the kidney may be followed by a similar result.

Probably Oschner's theory of the prevention of renal calculi is the best that has been suggested. The ingestion of large amounts of distilled water will keep the urine bland and by dilution prevent the precipitation of salts. Whether the question of diet has anything to do with the prevention of renal calculi I do not know; but it seems extremely doubtful.

I do not believe that at present we are in position to say just what produces renal calculi.

J. Garland Sherrill (closing): Dr. Dowden has opened a most important phase of this subject. Physiology has taught us that acid phosphate of soda is the solvent agent for the normal solid constituents of the urine. We are also familiar with the fact that showers of oxalate of lime and other crystals in the urine may occur without the formation of calculi. These crystal showers may induce pain and discomfort, and in some instances may cause the formation of calculi.

My belief is that renal calculi may form in several different ways. For instance, if the patient eats largely of materials containing oxalates, or which form oxalates, and there is imperfect assimilation deposits of oxalates may occur in the urine. The passage of crystals causes minute hemorrhages in the renal pelvis; and the nucleus of calculous formation is colloid material; this may originate from a minute hemorrhage or from infection as claimed by Rosenow.

In localities where there is a great amount of limestone and lime water is used renal calculi are commonly observed. This has been known for a century or more. It will be remembered that many years ago Dudley, of Lexington, made quite a reputation operating for renal calculi. Hunter McGuire did the same thing in Virginia. Both are limestone districts. So much for the manner in which calculi form. Evidently they develop more frequently when there is obstruction to the urinary outflow.

So far as prevention of recurrence of renal calculi is concerned: I would advise plenty of exercise and the ingestion of large quantities of water. After all water is the best solvent known. I would also prescribe urotropin which is a good solvent of oxalates and prevents urinary infection. Nitro-muriatic acid also seems to have good effect in preventing the deposition of urinary salts. In addition to these measures I would advise the administration of acid phosphate of soda in five grain doses. With these methods patients may be kept fairly comfortable and by frequent examinations renal calculi may be discovered before they produce any alarming symptoms.

The patient should be instructed to take proper exercise and drink large amounts of water thus aiding kidney function and stimulating the skin to greater activity. It has been my custom to request the family physician and the patient to observe these measures after operations for renal calculi.

FORUM

OPTOMETRY EXPOSED

To the Editor:—

During the three years that I occupied the unique position of traveling salesman in the jobbing optical business and, at the same time, refractionist and co-worker in every move which had for its end the uplift and advancement of the profession I represent and enjoy, I had the pleasure of coming in close personal contact with most of the medical and non-medical refractionists in Kentucky. In a great many instances I was accorded the privilege of either assisting in or observing the work of the two professions. These privileges have proven of inestimable value to me. My observations together with the many conversations I have had with men of both professions have lead me to two outstanding conclusions. First, the dauntless spirit of Optometry, overshadowed as it once was by a lack of easy access to the fountain of knowledge, has won for itself after surmounting obstacles that would have cooled the ardor of a less energetic organization, a rightful place in the confidence and esteem of the public and the long delayed recognition of our medical brothers. Second, no group of men constituting the body politic of any organization have ever displayed greater courage and determination to measure up to a self imposed standard than those who represent Optometry in Kentucky. When the stage was set for a law in Kentucky one could hear on every hand the rumblings of discontent, the stifled cry of evil forebodings and the salvos of charge and countercharge. The political battlements were well planned and laid off, the front line trenches were bristling with feverish activity, and every man awaited the midnight hour when the signal would be given to advance into that "No Man's Land" of legislative uncertainty from which he must ultimately return, which, victor or vanquished? It so happened that certain battle formations had to conform to clearly defined rules, which brought together the Generals of the two opposing armies. This forced contact proved a boon to all concerned. It prevented the carnage and saved the day; for through these conferences the leaders came to know each other, to learn what each was striving for and what each hoped to attain. A truce was declared, an agreement was reached, an honorable armistice was signed. And to this day the signatories of that memorable document have neither given nor found cause for regret.

So it ever has been. Men who differ with other men may not always quite understand those with whom they differ. In the general scheme of things the individual disturbing element should be eliminated. No reasonable man would think of condemning a perfectly good ship because of its barnacles, nor would he cast to the swine a barrel of apples because of some bad apples. The same rule applies to organized effort of any kind. First ascertain what it collectively stands for. Then, instead of an unchristian kick, extend a manly hand; not necessarily a helping hand because a helping hand is neither as helpful nor as appreciated as the hand whose lusty grip bespeaks recognition of ideals well founded and work well done. It is impossible to separate the human element from the general scheme of things. The human element, which is mostly individual, often manifests itself in a way quite contrary to the scheme of the whole because it is the outgrowth of individual conception. We find so many elements—good, bad and indifferent —entering into the formation of personal estimates and analyses that it would seem to me eminently proper to eliminate them from a calm consideration of the hopes, aspirations, ideals and attainments of any organized effort since, all too often, we find such disturbing elements deriving their sustenance from the tap root of personal grievance, either real or imaginary. Whenever a man cries out in impotent rage to a tranquil world that some other man lacks the qualities essential to a comprehensive knowledge of the work he has undertaken, he immediately sets himself up as judge and jury. The public does not condone but condemns such a proceeding because the public, in its final analysis of merit, is impersonal, exacting and fair. To those of this type I would present the following quotation which I have taken the liberty of altering to exactly suit the case. "The greatest proof of a man's own littleness is his inability to recognize in other men qualities as good as his own." If individuals are measured by the yardstick of achievement, organizations of those same individuals should be measured likewise; making due allowance for the raw edges and defective yarn found here and there in the warp and woof of every organization.

Cross currents of human thoughts like those of human emotions occasionally set up discordant vibrations which, for the moment, upsets the symphony of the whole. This unfortunate element may be charged up to human weakness; so in the following exposition of Optometry, what it stands for and what it is attaining, the writer hopes to eliminate the discordant element of ego and present concrete facts, in the face of which he fails to find a cogent reason for further delay on the part of those ultra conservative and discriminating professional men who still believe the time is NOT YET. It is with pardonable pride, heightened by the knowledge that no other set of men have surpassed it, that I call attention to the great number of Optometrists who, although exempted from examination, have burnt the candle at both ends in order to lift from themselves the stigma of exemption, and stand before

a trusting public with shoulders squared and chins up, happy in the knowledge that they have done even more than was required of them. They have not contented themselves with simply improving their knowledge and technique of optometric practice but, for the sake of the public they serve, have assimilated a working knowledge of ocular pathology and functional diseases which sooner or later manifest themselves in the fundus oculi in order to protect the public against the insidious encroachment of many such disorders which might easily escape the less astute practitioner. In taking up the burden of these additional branches no effort has been made to invade the field of the Opthalmologist, and no such effort has been or will ever be contemplated. On the other hand, we have learned by experience that the inclusion of these additional subjects in our self imposed curriculum has proven a great aid to both the public and the Ophthalmologist, since many cases referred to the Ophthalmologist by us would pass on in ignorance of a lurking danger had we not discovered with the ophthalmoscope the almost infallible signs, and sent them to the proper authority.

Conditions of active inflammation, traumatism, hordeolum, chalazion, pterygium, dacryocystitis, imbedded foreign bodies, intra-ocular tension, the various forms of cataract, organic disturbances which are often manifested in the fundus oculi before the patient seeks medical aid, and a host of other primary and secondary conditions are referred to our medical brothers for proper treatment before any attempt is made to prescribe correcting lenses, save in those cases where correcting lenses prove an aid to the treatment. These last cases are handled jointly by the Optometrist and the Ophthalmologist with splendid results, except where the prognosis is from the very beginning unfavorable.

As the administrative head of this organized body of splendid men who strive and achieve, who have hitched their wagon to the proverbial star and are headed straight to the goal, whose ambition does not exceed their energy, and whose dauntless courage and faultless spirit of fair play places them safely and by far above the level of the egoist and charlatan, which they have had imputed to them, it gives me the keenest pleasure to pronounce them in every respect representative of the lofty ideals of that old and honorable profession—medicine. I know there are exceptions which can be pointed out. I can point them out myself. But I can also point out the same character of exceptions in every other profession. It is not of these that I write. It is of those who represent the true ideals of Optometry, just as you point with pride to those who represent the true ideals of medicine, surgery and every allied branch of science.

B. F. FOSTER, President.
Kentucky Association of Optometrists.

BOOK REVIEW

Recovery Record for use in Tuberculosis, by Gerald B. Webb, M. D. Consulting Physician, Cragmor, Glockner, and Sunnyrest Sanatoria; Late Lieut. Col. M. C. U. S. A., Senior Consultant in Tuberculosis, A. E. F.; former President, National Tuberculosis Association; President, Colorado School of Tuberculosis, Colorado Springs, Col., and Charles T. Ryder, M. D., Cragmor and Glockner Sanatoria; Colorado School of Tuberculosis, Colorado Springs, Col. Paul B. Hoeber, Inc., Publishers, 67-69 East 59th St., New York City. Price $2.00 net.

While many books are available for the tubercular patient, the combination of this with a recovery record has been wanting. As a result, too often such books have been too soon laid aside, whereas it has seemed to the writers that the patients should be in daily touch with a book of this kind.

Mental cheerfulness is all important in the cure of this disease, and the aim of this little book is to keep courage and cheer at the highest level without making the patient too introspective. The publication is the result of the authors' twenty-five years experience of the needs for successful guidance.

The book is an attractive volume of pocket size. There are 78 pages of text divided into four chapters with the titles as per table of contents.

Following the text there are 108 chart sheets like the attached. These are each good for one week and on them the patient is expected to keep his own recovery record from day to day. They are undated so that they may be begun at any time and their use contniued for an entire two years from the time started.

Above and below each chart there is an optimistic or cheerful quotation, either prose or verse, taken from sources medical as well as literary, each quotation carrying a distinct message for the patient. The daily use of the book for the purpose of recording, insures the continual reading and rereading of these epigrammatic thoughts, which cannot help but put the patient in that most desirous state—a happy frame of mind.

Umbilical Colic in Children.—Timmer compares the conflicting publications on this subject, but is convinced of the reality of a nervous and recurring form of pains in the umbilical region which have no connection with the appendix, helminths, enteritis, tuberculous glands or purpura. The attacks of pain are brief, the child seems normal in the intervals, and the abdomen seems normal except for a little tenderness at certain symmetrical points or on the median line.

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COUNTY SOCIETY REPORTS

Bracken County: The Bracken County Medical Society met in joint session with the Harrison County Medical Society, at the Courthouse, in Brooksville, on Monday evening, October 1, 1923, with the following doctors present: Harrison County: E. S. McIlvain, J. E. Wells, M. McDowell, W. B. Moore, W. H. Carr, Josephus Martin, J. P. Wyles, from Pendleton County we had Doctors W. A. McKinney and H. C. Clark, Bracken County: C. F. Haley, C. R. Rice, J. G. Dodds, C. H. Wallin, J. C. Norris, W. B. Wallin, and J. M. Stevenson.

W. H. Carr read a paper "Pneumonia in Children."

E. S. McIlvain on "Focal Infection". After a general discussion of these papers the society adjourned.

A light lunch was served after adjournment, by the Blue Triangle Club, of the Brooksville High School, and was enjoyed by all.

An invitation was extended to have the two societies meet at Cynthiana on the first Monday in November.

J. M. STEVENSON, Secretary.

Harrison: The Harrison County Medical Society held the October meeting with the Bracken County Medical Society at Brooksville, October 1, 1923. Members present: Drs. McLain, Wells, Martin, McDowell, Carr, Wyles and W. B. Moore, Drs. Will Wallen, Haley, Stevens, Carlis Wallen, Norris, Rice and Dodds, of Bracken Society and Drs. Clark and McKinney, of Falmouth.

Meeting called to order by Dr. Will Wallen. Reading minutes of previous meeting omitted. W. B. Moore reported case of malignancy of Transverse Colon, in which X-Ray was misleading showed definitely the lesion Ilio Cecal region.

Will Wallen reported case of Corenioma of Orbit, destroying the eye ball cavity, filled with maggots treated with radium remarkable improvement after case seemed hopeless. Dr. Haley reported case of Carcium of Breast with enormous swelling of arm.

W. A. McKinney reported obscure case of appendicitis.

H. C. Clark talked on Importance of a Real Live Medical Society.

W. H. Carr read paper on Pneumonia in Children.

E. S. McWain on The Relation of Disease of the Tonsils to Systemici Disease.

J. Martin, Norris, Wells, McDowell, McKinney and Carr discussed these papers.

Meeting adjourned to meet as guests of Bracken Society.

W. B. MOORE, Secretary.

INDEX NUMBER

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EDITORIAL

COUNTY MEDICAL SOCIETY OFFICERS.

During December, practically every county society in Kentucky elects its officers for the next year. Most of our societies are holding regular meetings and are doing actual work now. To these, it is unnecessary to emphasize the importance of the offices of president and secretary. To the several societies which have not been holding regular meetings, we desire to urge particularly at this time the importance of the selection of a president and secretary who are willing to give the time and energy which are necessary to securing regular programs and holding regular meetings. It is important to remember that the Councilor for your district is ready and willing and anxious to help in any way that he can. The offices of the State Association and the Secretary of the American Medical Association are equally willing to give any advice or assistance possible. After all, however, it is impossible for anybody outside of the county to lend effective assistance unless the members of the profession within the county desire to have the benefit of the mutual association which can only be secured by an active county society. The societies are urged to arrange for dinner-meetings at the time of the election of officers so as to secure as large an attendance as possible, and have a free discussion of what is best in the conduct of the society. As soon as you elect your new secretary, remove from him the most onerous of his duties by giving him a check immediately for your State and County dues for next year. This not only secures your membership in the State and American Medical Association but it insures your getting the Journal throughout the year and having legal protection.

In this connection, it is important to remember that the House of Delegates at Crab Orchard instructed the Medico-Legal Committee that no employment of attorneys would be recognized hereafter, unless it was approved in advance of the employment by the Chairman of the Medico-Legal Committee and its attorney, and that, under no circumstances, would a case be defended for a member whose membership had been permitted to lapse at the time or after the case causing action had arisen. In the past two years, the Association has expended more than $3,000 because this rule has not been rigidly enforced. We hope the reader of this editorial will not be one of those who suffers from such neglect in the future.

The Kentucky State Medical Association has never in its history been functioning so well for the public interest as it now is. There is less illness in Kentucky than there ever was before. It is more promptly and effectively treated. Our people live longer, and, during this longer life, have far greater effectiveness than they had before in its history, and we are really just at the beginning of the march of advance in better health and health conditions. Let's so organize during December that 1924 will be the best year Kentucky has ever had.

THE WOMAN'S AUXILIARY.

The Woman's Auxiliary of the Kentucky State Medical Association, which was started at Paducah and definitely organized at Crab Orchard, is actively at work. County Committees are being appointed in each county of the State to perfect the local organizations.

In many states, the meetings are arranged so that all the members bring their wives to the county society meetings and either separate or joint meetings are held. Many times the women bring basket lunches and have meet with the members of the legislative and fiscal courts and tell them of the health needs of their sections. It is hoped that as the organization reaches the various counties every physician will see that his mother, wife and daughters become active members.

THE CALORY KITCHEN

The Editor of the Journal has just returned from a visit to the Mayo Clinic, at Rochester, Minnesota, and wishes every physician in Kentucky could have had the opportunity of spending a month at this unique medical center.

During the past several years, the Clinic has been organized as a definite teaching branch in both graduate and undergraduate medicine in the Medical Department of the University of Minnesota, probably today the greatest institution for medical education in the world. Here one sees medical science at its highest development. It is quite evident that if every citizen of the United States could have available and could use the knowledge which is now in possession of our profession that a majority of the disease, which cause illness and death in persons under seventy-five years of age, could and would be entirely prevented or relieved without more than temporary inefficiency. The Editor's case is in point.

Some twenty-five years ago, the nerve was killed in one of his molar teeth and it was crowned. About fifteen years afterwards, this crown became loose and was removed and within a week or ten days he had an attack of renal colic. During this summer, while attending the meeting of the American Medical Association in San Francisco, a similar accident occurred and he had a far more severe attack of the same condition. A very complete examination at Rochester indicated that the development of renal lithiasis in his case was due to a focal infection, either from this dead tooth or from the infected stubs left from a tonsillectomy in 1878. The proof that renal lithiasis is due to an infection and to the selective action of bacteria is made by Rosenow and those associated with him in this Clinic. When one thinks of the number of cases of renal stone which develop to, and through, the point of the destruction of the kidney that could have been prevented by careful systematic examination before the development of any stone, one is appalled.

Another remarkable development in the practical application of scientists to the treatment of the prevention of diseases in the past several years has been in the department of dietetics. Every high school student has been taught something about the calory. We understand, in general terms, the division of foods into protein, fats and carbohydrates. We know something about the recent work in vitamines, but we felt that no other development at Rochester was more interesting than that of the calory kitchen where all of these things that the scientists have learned about diet are actually made applicable, and where the physician in charge of each case has his patient's diet as carefully regulated as he regulates his other habits. The patient simply goes to the table and is served with a delightful meal, just as he is at home, which contains the number of calories he needs to enable him to best carry on, properly proportioned between the several classes of food and containing all the necessary vitamines. It is interesting to see patients at the same table served with similar trays and all pleased with both the character and the amount of food, some having weight reduced, others having it put on, while others are actually being fed so that they can work, with the foods that create harmful conditions in their particular cases entirely avoided. This harnessing of science to the actual needs of mankind gives the things that distinguish Rochester. It is all done simply and effectively and the half dozen Kentucky doctors who were there while the Editor was were delighted with the opportunity for seeing the most practical results that are being secured anywhere in modern medicine.

The Journal cordially recommends that members of the profession, desiring to make post-graduate studies, shall investigate the opportunities afforded at the University of Minnesota before going elsewhere.

Ethyl Chlorid Freezing in Treatment of Ulcerative Stomatitis.—Jelinek states that in 1919 and 1920 he had occasion to treat hundreds of soldiers and civilians with ulcerative stomatitis of the Vincent type of infection with spindle-shaped bacilli and spirochetes. The deeper the material for examination was taken, the purer the cultures of these microorganisms. He treated eighty-two cases by local treatment with ethyl chlorid, and the ulceration promptly subsided. The cure was complete in every case within a few days, while with all other methods of treatment the ulceration dragged along for weeks. To show that the ethyl chlorid did not act chemically, the ulcerations were painted with it several days in succession, without freezing, without results. It acted only in a temperature below Centigrade zero, the spirochetes disappearing after the first freezing, in some cases, while in others a second freezing after twenty-four hours was required. The spirochetes seem peculiarly susceptible to the action of the cold, and he suggests that this ethyl chlorid refrigeration method might prove useful for other spirochete affections, alveolar pyorrhea, gingivitis in scurvy, etc. There were only six relapses among the eighty-two patients thus treated.

SPECIAL ARTICLE

OBSTETRICAL COLUMN

Edited by Alice N. Pickett
Director of Prenatal Clinic Louisville City Hospital.

Introduction

In order to make our Journal more recent history, we are publishing this month two services instead of one. Thus, in the future, our reports will be published soon after the discharge of our patients, while the details remain clear in our minds and continue to be the subject of interest and discussion about the Hospital.

Syphilis

Thirty-five mothers had Wasserman tests made. Six gave "positive" reactions or 17.1%. Only one mother had anti-syphilitic care. Her baby was the largest of the group and was apparently normal. Of the five untreated mothers, two had dead babies. One had a small, frail baby which left the hospital weighing less than its birth weight. Two had apparently normal children.

Seven Fetal Deaths

(Four due to obstructed labor)

Two of these were due to syphilis and one to prematurity.

Case No. 26. Hospital No. 52466. An asphyxiated baby weighing four pounds and one ounce was born spontaneously after 16½ hours of normal labor. Resuscitation impossible. No autopsy. Cause of death unknown.

Case No. 14. Hospital No. 52292. Dr. Williams, Interne; Dr. Rubel, Staff. Para 1. A prenatal clinic patient. Pelvis generally contracted. External conjugate 19, Diagonal 10. On the delivery table, 7 hours after admission, a pulsating loop of cord was discovered in the vagina. Dr. Williams made upward pressure on the head so that the cord was still pulsating on the arrival of Dr. Rubel, 30 minutes later. The pulsation had ceased however before all could be made ready for a version. The Trendelenburg position was maintained for twenty minutes. A still-born baby, weighing 6 pounds and 4 ounces was delivered by version.

Case No. 24. Hospital No. 52424. Dr. Williams, Interne; Dr. Rubel, Staff. Para 1. A clinic patient. "Generally contracted pelvis of moderate degree." History stamped "no vaginal examination after onset of labor." The external measurements were 25-26-18. The promontory could not be felt because of a small outlet. The membranes ruptured before the onset of labor. On admission to the hospital this patient was in the early stage of labor and the head was so high that it could not be felt per rectum. It began to fix next day under the pressure of forceful contractions. The descent was hardly discernable and the dilatation required about 47 hours. An attempt to deliver by forceps proved a failure. It was impossible to drag the head down past the promontory which encroached upon the birth canal to a marked degree. A version was done and forceps were applied to the after-coming head. A still baby was born weighing 7 pounds and 2 ounces.

This case teaches us two important lessons. When I failed in clinic to reach the promontory because of a small outlet, I should have examined this patient under an anesthetic and found out the exact degree of flattening. At the post-partum examinations the diagonal was found to be 9 c.m.

By this case we are also taught the danger of undue postponement of delivery by section. We had here a primipara, at full term, the baby being of average size. The head was not fixed until the 2nd day of labor, the descent was hardly discernable and the dilatation was exceedingly slow. All this information had been easily gotten by abdominal and rectal examinations. The vagina had not been invaded. Dr. Rubel regrets he did not resort to Cesarean Section after a fair test of labor had brought about so little progress. He would undoubtedly have done so had I given him a truer estimate of the limitations of the birth canal.

Case No. 30. Hospital No. 52478. Dr. Williams, Interne; Dr. Rubel Staff. Para 1. A clinic patient. Pelvis normal. Position R. O. P. After about 16 hours of labor a dead baby weighing 8 pounds and 2½ ounces was delivered by version. No autopsy. Cause of death doubtless injuries sustained at delivery. The head was unusually large.

One Maternal Death

Case No. 22. Hospital No. 52370. Dr. Williams, Interne; Dr. Rubel, Staff. Para 1. No prenatal care. On admission she presented all the symptoms of pre-eclampsia. There was pronounced oedema, involving even the sacral region. Her blood pressure was 118-114. The urine contained abundant albumin and casts.

She was given a dose of castor-oil and the protein foods were restricted. The next day the pressure rose to 220 and the taxic symptoms were more marked. The colon was further cleansed by a soap suds and soda enema. Labor pains developed after she had been 24 hours in the hospital and dilatation was complete after 3 hours.

Obs. Service. Louisville City Hospital—8-16-23. 9-7-23. Dr. F. E. Williams, Int. Dr. R. L. Walgren, Ext.

Hospital Deliveries.

No.	Reg. No.	Para.	P. C. Care	B. P. R.	Toxaemia	Wass.	Prenat. Syph. Tr.	Ch. of Pelvis	Ch. of Delivery	Pos.	Wt. Baby At Term		Fate of Baby	Cond. Mother on Discharge	Cond. Baby on Discharge
1	52133	1	Clinic	Normal		Neg.		Normal	Spontaneous	R. O. A.	7.7½	Yes	Living	Good	Good
2	52121	2	Clinic	120-150	Slight	3 Plus	6 Salvar	Normal—Prob. Breech	Potter's Versiou	L. O. A.	8.4	Yes	Living	Good—3 Plus	Good—No sign lues
3	52151	1	Clinic	Normal		Neg.		Normal	Spontaneous	L. O. A.	8.0	Yes	Living	Good	Good
4	52149	1	No			4 Plus	None	Normal	Spontaneous	L. O. A.	5.15½	Yes	Lived 31 hours	Fair—4 Plus	Dead
5	52178	1	Clinic	Normal		Neg.		Somewhat Flat	Spontaneous	L. O. A.	6.4	Yes	Living	Good	Good
6	52186	2	Clinic	Normal		3 Plus	None	Normal	Spontaneous	L. O. A.	6.13	Yes	Living	Good—3 Plus	Good—No sign lues
7	51798	1	Clinic	120-138	Moderate	Neg.		Normal	Spontaneous	L. O. A.	7.10	Yes	Living	Good	Good
8	52207	13	No			Neg.		Normal	Spontaneous	O. A.	12 1-3 oz.	5 Mo.	Lived 1 hour	Good	Dead
9	52208	9	Clinic	Normal		Neg.		Normal	Spontaneous	L. O. A.	9.14½	Yes	Living	Good	Good
10	51939	5	No			Neg.		Normal	Spontaneous	L. O. A.	9.10	Yes	Living	Good	Good
11	52255	3	No			Neg.		Normal	Spontaneous	L. O. A.	9.6½	Yes	Living	Good	Good
12	52266	10	No			Neg.		Normal	Spontaneous	L. O. A.	8.3	es	Living	Good	Good
13	52289	1	No			Neg.		Normal	Spontaneous	L. O. A.	7.12½	Yes	Living	Good	Good
14	52292	1	Clinic	Normal		Neg.		Gen'l. Contrasted	Version	Transverse	6.4½	Yes	Dead	Good	Dead
15	51757	1	Clinic	120-140	Slight	Neg.		Outlet Cont. Inlet?	Forceps	R. O. A.	9.8	Yes	Living	Good	Good
16	52232	4	No			4 Plus	None	Normal	Spontaneous	L. O. A.	6.6	Yes	Living	Good—4 Plus	Good—No sign lues
17	52321	11	No			Neg.		Normal	Spontaneous	L. O. A.	7.5	Yes	Living	Good	Good
18	52337	1	Clinic	Normal		Neg.		Normal	Spontaneous	L. O. A.	8.2	Yes	Living	Good	Good
19	52403	3	No			Neg.		Normal	Spontaneous	L. O. A.	7.4	Yes	Living	Good	Good
20	52375	8	No			Neg.		Normal	Spontaneous	L. O. A.	6.15	Yes	Living	Good	Good
21	52398	1	Clinic	Normal		Neg.		Gen'l. Cont. Mild Degree	Spontaneous	L. O. A.	5.15½	Yes	Living	Good	Good
22	52370	1	No			?		25-28-18½	Potter's Version	O. C. C.	5.4	Yes	Living	Dead	Fair
23	52425	2	No			Neg.		Normal	Spontaneous	L. O. A.	6.½	Yes	Living	Good	Good
24	52424	1	Clinic	Normal		Neg.		Gen'l. Cont. Mild Degree	Forceps and Version	L. O. P.	7.2	Yes	Dead	Fair	Dead
25	52469	1	No			?		?	Spontaneous	L. O. A.	8.13	Yes	Living	Good	Good
26	52466	1	Clinic	Normal		Neg.		Normal	Spontaneous	L. O. A.	4.1	Yes	Dead	Good	Dead
27	52484	3	No			4 Plus	None	?	Spontaneous	L. O. A.	2.12	6 Mo.	Dead	Good—4 Plus	Dead
28	52479	1	Clinic	Normal		Neg.		Outlet Cont. Inlet Fair?	Spontaneous	R. O. A.	7	Yes	Living	Good	Good
29	52346	3	No			Neg.		Fair 25-27½-19½	Version	L. O. P.	8.4	Yes	Living	Good	Good
30	52478	1	Clinic	Normal		Neg.		Normal	Version	R. O. P.	8.2½	Yes	Dead	Left L. O. A.	Dead
31	52546	8	Clinic	110-134	Slight	Neg.		Normal	Spontaneous	L. O. A.	6.14	Yes	Living	Left L. O. A.	Fair
32	52563	1	Clinic	Normal		3 Plus	None	Inlet Good—Outlet Cont	Spontaneous	L. O. A.	7.5	Yes	Living	Good—4 Plus	Good—No sign lues
Home Deliveries.															
33		2	No						Spontaneous	L. O. A.	7?	Yes	Living	Good	Good
34		1	Clinic	Normal		Neg.		Normal	Spontaneous	R. O. A.	7.8	Yes	Living	Fair	Good
35		7	Clinic	Normal		Neg.		Normal	Spontaneous	L. O. A.	7?	Yes	Living	Good	Good
36		3	No						Spontaneous		?	Yes	Living	Good	Good
37		8	Clinic	Normal		Neg.		Normal	Spontaneous	L. O. A.	?	Yes	Living	Good	Good
38		10	Clinic	Normal		Neg.		Normal	Spontaneous	R. O. A.	?	Yes	Living	Good	Good
39		4	No						Spontaneous	R. O. A.	?	Yes	Living	Good	Good
40		5	Clinic	Normal		Neg.		Normal	Spontaneous	R. O. A.	?	Yes	Living	Good	Good

No. of Clinic cases, 22.
No. of Non. Clinic cases, 18.
No. of Foetal deaths, 7.
No. of Maternal deaths, 1.

No. of H. B. P. Clinic cases, 4.
No. of Pre-Eclamptic, non-clinic, 1.
No. of Clinic Toxaemia cases, slight 3; moderate 1.
No. of Eclampsia, 0.

No. of Puerpal infections 0.
No. of Retro version on discharge. 5.

A version was done by Dr. McConnell after 2 hours of 2nd stage pains with no progress. A living baby, weighing 5 pounds and 4 ounces was delivered. Within one hour after delivery the patient went into profound shock, followed by a profuse post-partum hemorrhage. The bleeding was controlled by pituitrin and massage, but the symptoms of shock grew worse in spite of vigorous supportive measures and death occurred 3 hours after delivery.

Shock following delivery by version calls attention at once to the possibility of a ruptured uterus. Dr. McConnell does not believe this catastrophe possible in this case, because of the ease with which the version was accomplished. During the operation, the anesthesia was held at the surgical degree, the dilatation was complete and the baby was small. He did not order the abdomen to be opened, first because he felt sure no harm had been done to the uterine wall and secondly because the woman's condition was too grave to permit laparotomy. Unfortunately no autopsy was allowed. Dr. Williams did however make a thorough manual exploration of the interior of the uterus post-mortem and he could find no rent. The flanks were also aspirated post-mortem and no blood obtained through the needle.

The cause of death was given as shock, the contributing causes being pre-eclamptic toxaemia and post-partum hemorrhage.

Forceps And Versions (Living Babies)

Case No. 2. Hospital No. 52121. Dr. Williams, Interne; Dr. Rubel, Staff. Para 2. A clinic patient. External measurements, 24-24-18. Diagonal conjugate 12. Outlet good. After 27 hours of labor the head was not entering the inlet and by version a living baby weighing 8 pounds and 4 ounces was delivered. Mother and child living and well.

Case No. 15. Hospital No. 51757. Dr. Williams, Interne; Dr. Rubel, Staff. Para 1. A clinic patient. Pelvis described as "inlet probably normal—outlet somewhat contracted." The abdomen was very large and tense. X-ray showed "single fetus."

Low forceps were applied after 3 hours of second stage pains with arrested progress. A 9½ pound baby was delivered. Mother and child living and well.

Case No. 22. Reported under maternal death.

Case No. 29. Hospital No. 52346. Dr. Williams, Interne; Dr. Rubel, Staff. Para 3. No prenatal care. Dr. Williams described pelvic capacity as "fair." A version was done after 2 hours of second stage pains with arrested progress. The baby weighed 8 pounds and 4 ounces. Mother and child living and well.

Syphilis

37 Wasserman tests were made on this month's service, of which six were "positive" or 16.2%.

Two mothers had received some treatment. One of these (case No. 1) aborted at 4 months, —the other (case No. 4) was delivered at term of an apparently normal child. Of the four untreated mothers, two lost their babies in utero (cases 13 and 26). The other two mothers had small babies (cases 12-38) one of which left the hospital weighing 3 pounds 14 ounces or 6 ounces less than birth weight.

Seven Fetal Deaths

3 of these were due to Syphilis (cases 1-13-26).

One was due to Prolapsed Cord (Case 8).

One was due to Eclampsia (Case 16).

Two were due to Dystocia (Cases 25-29).

All these cases of fetal death will be described later except:—

Case No. 29. Hospital No. 52954. Dr. Walgren, Interne; Dr. Rubel, Staff. Para 1. No prenatal care. External measurements 23-27-18. The first stage required 17 hours. After 4 hours and 14 minutes of second stage, an asphyxiated baby was born spontaneously. All attempts at resuscitation were futile. No autopsy. The cause of death was probably cerebral hemorrhage, due to injuries sustained during the prolonged 2nd stage.

Maternal And Fetal Death

Case No. 8. Hospital No. 52623. Dr. Walgren, Interne; Drs. Speidel and Rubel, Staff. Para 1. No prenatal care. She was admitted to the ward in not very active labor. Her measurements were 22-21-17. She was given a test of labor pending Caesarean Section. Her contractions were not severe and at first were far apart and irregular but they later became more frequent and more severe. Fifty hours after admission a non-pulsating cord was discovered on rectal examination. Dr. Speidel delivered by axis-traction forceps. The baby was still-born. The mother collapsed under the anesthetic and was resuscitated with some difficulty. The symptoms were those of cardiac failure. Two days later she died of aspiration pneumonia complicated by cardiac enfeeblement.

Eclampsia

We had this month three (3) cases of eclampsia, none of whom had any prenatal care directed towards the prevention or correction of toxaemia. These were all grave cases and one of them (case No. 25) was complicated by dystocia due to malformed pelvis. Our mortality, both fetal and maternal, was unusually high.

Obs. Service—Louisville City Hospital, 9-8-23—10-1-23. Dr. R. L. Walgren, Int. Dr. L. T. Rector, Ext.

Hospital Deliveries

No.	Reg. No.	Para	P. C. Care	B. P. R.	Toxemia	Wass.	Prenatal Syph. Tr.	Ch. of Pelvis	Ch. of Del.	Pos.	Wt. Baby	At Term	Fate of Baby	Cond. Mother on Discharge	Cond. Baby on Discharge
1	52618	4	No			4 Plus	6-606 5 Hgs.	?	Spontaneous	?	?		Dead	Left 6th day	Dead
2	52624	1	Clinic	Normal		Neg.		Flat	Spontaneous	L. O. A.	3.8	8 Mo.	Living	Left 12th day	Left L. O. A.
3	52632	1	No		Eclampsia	?		?	?	?	?	Yes	Dead	Dead	Dead
4	52643	1	Clinic	Normal		Pos.	4-606	Normal	Spontaneous	R. O. A.	6.5	es	Living	Good except lues	Good-No Sign Lues
5	52461	1	No			Neg.		Normal	Spontaneous	L. O. A.	6.14	Yes	Living	Good	Good
6	52622	1	No			Neg.		?	Spontaneous	L. O. A.	4.9	8 Mo.	Living	Good	Left L. O. A.
7	52666	1	Clinic	Normal		Neg.		Mod. Cont. Mild Degree	Episiotomy	L. O. A.	8.?	Yes	Living	Fair	Good
8	52623	1	No			?		22-21-26-5—17	Forceps	L. O. A.	6.13	Yes	Dead	Dead	Dead
9	52703	5	Clinic	Normal		Neg.		Normal	Spontaneous	L. O. A.	5.7	Yes	Living	Good	Good
10	52689	1	No			Neg.		20-26-5-20-5	Forceps and Episiotomy	L. O. P.	7.4	Yes	Living	Good	Fair
11	52713	2	No			Neg.		Normal	Spontaneous	L. O. A.	11.2	Yes	Living	Good	Good
12	52734	1	No			3 Plus	None	21-24-17-5	Spontaneous	L. O. A.	5.14	Yes	Living	Good except lues	Good-No Sign Lues
13	52747	2	No			3 Plus	None	?	Spontaneous	Breech	5?	8 Mo.	Dead	Good except lues	Dead
14	52760	1	Clinic	Normal		Neg.		Normal	Spontaneous	L. O. A.	6.1	Yes	Living	Good	Good
15	52776	5	No			Neg.		Normal	Spontaneous	?	9.0	Yes	Living	Good	Good
16	52744	1	Clinic	152-90	Eclampsia	Neg.		26-28-21	Forceps	L. O. A.	8.0	Yes	Dead	Good	Dead
17	52797	2	No			Neg.		Normal	Spontaneous	R. O. A.	6.3¾	Yes	Living	Good	Good
18	52798	6	Clinic	Normal		Neg.		Normal	Spontaneous	L. O. A.	7.14	Yes	Living	Good	Good
19	52820	6	Clinic	138-140	Slight	Neg.		Normal	Spontaneous	L. O. A.	7.4	Yes	Living	Good	Good
20	52823	2	Clinic	150-90	Slight	Neg.		Normal	Spontaneous	R. O. A.	5.12	Yes	Living	Good	Good
21	52840	12	Clinic	140-80	Slight	Neg.		Normal	Spontaneous	L. O. A.	8.9	Yes	Living	Plebitis	Good
22	52843	1	No			Neg.		Fair	Spontaneous	L. O. A.	7.12	Yes	Living	Good	Good
23	52868	1	Clinic	Normal		Neg.		Fair	Spontaneous	R. O. A.	7.2	Yes	Living	Good	Good
24	52912	1	Clinic	150-78	Slight	Neg.		Normal	Spontaneous	R. O. A.	6.10	Yes	Living	Good	Good
25	52769	1	Clinic		Eclampsia	Neg.		Gen'l. Cont.	Caesarean	Transverse	7.2	Yes	Dead	Dead	Dead
26	52915	2	No			3 Plus	None	?	Spontaneous	L. O. A.	8.8	7 Mo.	Dead	Good except lues	Dead
27	52869	2	No			Neg.		Normal	Spontaneous	L. O. A.	8.6	Yes	Living	Good	Good
28	52929	9	Clinic	130-90	Slight	Neg.		Normal	Spontaneous	L. O. A.	7.2	Yes	Living	Good	Good
29	52954	1	No			Neg.		23-27-18	Spontaneous	L. O. A.	5.2	Yes	Dead	Good	Dead
30	52969	3	Clinic	142-100	Slight	Neg.		Normal	Spontaneous	L. O. A.	8.3	Yes	Living	Good	Good
31	52985	1	Clinic	?		Neg.		?	Spontaneous	L. O. A.	5.13	Yes	Living	Good	Good
32	53013	3	Clinic	116-154	Moderate	Neg.		Normal	Spontaneous	L. O. A.	5.0	Yes	Living	Good	Good
33	53052	1	No			Neg.		Normal	Spontaneous	R. O. A.	7.15	Yes	Living	Good	Left L. O. A.
34	53059	1	Clinic	Low		Neg.		Normal	Spontaneous	R. O. A.	6.15	Yes	Living	Fair	Good
35	53073	3	No			Neg.		?	Spontaneous	L. O. A.	5.13	Yes	Living	Good	Good
36	53096	11	No			Neg.		?	Spontaneous	L. O. A.	7.14	Yes	Living	Good	Good
37	53060	3	Clinic	128-154	Moderate	Neg.		Normal	Spontaneous	R. O. A.	8.1	Yes	Living	Good	Good
38	53084	1	No			4 Plus	None	?	Spontaneous	L. O. A.	4.4	8 Mo.	Living	Fair—lues	Fair-No Sign Lues
Home Deliveries															
39		7	No						Spontaneous	Breech	6?	Yes	Living	Good	Good
40		5	No						Spontaneous	L. O. A.	7?	Yes	Living	Good	Good
41		5	No						Spontaneous	Breech	7?	Yes	Living	Good	Good
42		6	Clinic	Normal		?			Spontaneous	R. O. A.	7?	Yes	Living	Good	Good
43		10	Clinic	Normal		Neg.			Spontaneous	L. O. A.	8?	Yes	Living	Good	Good

No. of Clinic cases, 21.
No. of Non-Clinic cases, 22.
No. of Maternal deaths, 3.
No. of Foetal deaths, 8.
No. of Puerperal infections, 0.
No. of Clinic H. B. P. cases, 8.
No. of Clinic Toxaemia cases, slight 6; moderate, 2.
No. of Eclampsia cases, 3.
No. of Eclampsia cases, Prenatal,
No. of Maternal syphilis, 6.
No. of Retroversion on discharge, 5.

Case No. 3. Mother died—baby lived.
Case No. 16. Mother lived—baby died.
Case No. 25. Mother died—baby died.

Case No. 3. Hospital No. 52632. Dr. Walgren, Interne; Dr. Rubel, Staff. Para 1. No prenatal care. Patient delivered at home by a private physician. Baby still-born. Complete laceration. Convulsions developed postpartum. She was brought into the hospital in coma which persisted until her death 17 hour after admission. The routine eliminative measures were taken under gas and ether anesthesia. Owing to the rupture of sphincter muscle and rectal wall, colonic irrigation was not effective.

Case No. 16. Hospital No. 52744. Dr. Walgren, Interne; Dr. Rubel, Staff. Para 1. This patient was only once in prenatal clinic. Her blood pressure was 152-90. She had a large goitre and seemed nervous and excited so that we considered the blood pressure not significant of toxaemia, especially as she showed no oedema and gave an absolutely negative history as to headaches, eye symptoms and oedema. The external measurements were normal but the pelvic examination was unsatisfactory because of the excitement and apprehension of the patient. During the night following the visit, she went into convulsions and was admitted to the hospital about 9 A. M. next day, unconscious and having frequent severe convulsions. The urine showed 4 plus albumin but no casts. The blood pressure was 188-96. Temp. 102.2. She was put under gas anesthesia, given soda colonic irrigation and a soda stomach wash followed by introduction of 6 oz. of S. S. Mag. Sulph. through stomach tube. 250 c.c. of blood were withdrawn from the vein. She was next put into a hot pack, morphine gr. ¼ by hypo followed in 4 hours by grain 1-6. A second hot pack followed the first by four hours. Soon after the second pack labor set in. About 17 hours after admission she was delivered by forceps of a child which had evidently been dead several hours. A 3rd degree tear was repaired on the delivery table with perfect results.

The patient made a complete recovery. During her convalescence she said she had no remembrance of having been in clinic. She also stated that she had been having headaches and oedema for the last 5 months of her pregnancy. Evidently she was much clouded mentally in clinic and her excitability was due to toxaemia. Since this experience no patient in clinic with a high blood pressure escapes our routine of "no meat—no eggs—no cheese—no brown beans and a daily dose of salts." The graver cases are brought at once into the hospital for daily blood pressure records, urinalyses, rest and general oversight.

Case No. 25. Hospital No. 52769. Dr. Walgren, Interne; Dr. Rubel, Staff. Para 1. This patient was in clinic only once. She had been admitted the day before as a waiting patient. She was a very short, thick, colored woman, at term, showing pronounced lardosis. The fetal position could not be made out. The fetal heart was heard in the right flank. An x-ray which had previously been done showed the baby in horizontal position and the long axis of the baby's body was in ant. post. position, the head being posterior. Her measurements were 23½-23-18 and the diagonal was 9-9½. The arch was narrow, the distance between the spines was fair.

We stamped the history "absolute indication for Caesarean Section." By some oversight the blood pressure was not recorded. Her labor record was peculiar. She had no pains during the day but for four nights was not able to sleep because of pain. She was a very patient sufferer, and the force of the uterine contractions was not realized until the pronounced head moulding of the baby was noted at delivery.

At noon, following the 4th restless night, she suddenly developed a convulsion but regained consciousness almost immediately. Her blood pressure was 158-90. A second convulsion followed 1½ hours later and she again immediately regained consciousness. The fetal heart was recorded 140, also active fetal movements. A Caesarean Section was decided upon and performed at 3 P. M. The urine showed slight albumin, no casts. The baby showed beginning maceration. The odor was exceedingly foul. On Studying the chart, the mother's pulse at the time of the fetal heart record was 148 and this was doubtless mistaken for the fetal pulse. The fetal movements must have been passive, rather than active.

The mother died 3 days later of lobar pneumonia. The contributing causes were, exhaustion and eclamptic toxaemia.

One Placenta Praevia Marginalis

Case No. 6. Hospital No. 52622. Dr. Walgren, Interne; Drs. Speidel and Rubel, Staff. Para 1. No prenatal care. She entered the hospital at 3 A. M. saying she had been awakened 2 hours earlier by cramps and had found her bed soaked with blood. She was about 8 months pregnant and the baby was alive. She was treated by rest and morphine. During the next 26 hours irregular cramps and slight bleeding continued. Dr. Speidel made a diagnosis of placenta praevia and inserted a bag, without rupturing the membranes. The bag was expelled 27 hours later, followed almost immediately by the spontaneous delivery of a living 8 month baby weighing 4 pounds and 1 ounce.

By his examination of the placenta, Dr. Speidel was able to confirm his diagnosis of placenta praevia.

The mother was discharged in good condition. The baby is gaining in weight under the care of Dr. Bruce's clinic.

OFFICIAL ANNOUNCEMENTS

PROCEEDINGS OF THE SURGICAL SECTION.

The Surgical Section of the Kentucky State Medical Association, in convention at Crab Orchard, September 17, 1923, was called to order at nine-fifteen p. m., by B. F. Zimmerman, the Chairman.

The Secretary, C. G. HOFFMAN, read the minutes of the organization meeting of the Surgical Section, which were approved as read.

JOHN R. WATHEN, of Louisville, read a paper on "Personal Observation on Treatment of Goitre," which was discussed by Guy Aud, Irvin Abell, and Walter Hume, and the discussion closed by Dr. Wathen.

J. G. SHERRILL, of Louisville, read a paper on "Considerations of Gastric Surgery," which was discussed by J. B. Kennedy, C. W. Dowden, and closed by the essayist.

J. H. BLACKBURN, of Bowling Green, read a paper on "Treatment of Tetanus, with report of a case," which was discussed by Sherrill and Gaither, and closed by the essayist.

J. RICE COWAN read a paper on "Abdominal Pregnancy, with report of a case," which was discussed by Dr. Patterson and closed by the essayist.

A. T. McCORMACK made a motion that the Surgical Section formally organize as a Section of the Association and that the Chairman and Secretary and one other member to be appointed by the Chairman be made a committee to report the necessary By-laws and to report at an adjourned meeting to be called by the Chairman the officers for the ensuing year and nominate to the State Board of Health a list of seven surgeons from whom the examiners in surgery will be selected for a term of three years for the examination of applicants for the special certificates in surgery which are now ready to be issued.

A. T. McCORMACK's motion was amended by Louis Frank to the effect that the Committee appointed confer with the gentlemen who desire to establish a section in Urology in an attempt to combine the Surgical with that Section.

The motion as amended, Dr. McCormack accepting the amendment, was carried. The meeting adjourned at eleven-thirty p. m.

SECOND SESSION, SEPT. 18, 7 P. M.

A second session of the Surgical Section was called Wednesday evening, September 18, at seven o'clock by B. F. Zimmerman. Dr. Zimmerman reported that the Committee, after conference with Dr. McCormack, had decided that a committee should be appointed which would adopt suitable constitution and by-laws for the Surgical Section, these to conform to the constitution and by-laws of the State Society and the requirements of the American College of Surgeons.

A. T. McCORMACK made a motion that the Committee be empowered to draw a constitution and by-laws which will be in effect until the next annual Section meeting, at which they will be approved and amended in accordance with the will of the members of the Section. The motion was seconded and carried.

B. F. ZIMMERMAN further reported that the doctors selected for the list of examiners in surgery were: Irvin Abell, Frank Boyd, of Paducah, C. A. Vance, of Lexington; J. H. Blackburn, of Bowling Green; C. C. Howard, of Harlan, W. L. Gambill, of Ashland, and J. G. Sherrill, of Louisville. A motion was regularly moved, seconded and carried to approve the list.

For officers of the Surgical Section there were elected G. A. Hendon as Chairman; C. C. Howard of Glasgow, as Vice-Chairman; and C. G. Hoffman as Secretary.

C. G. HOFFMAN, Secretary of the Section.

PROCEEDINGS OF THE EYE, EAR, NOSE AND THROAT SECTION.

MONDAY, 9 A. M., SEPTEMBER 17.

The first session of the Eye, Ear, Nose and Throat Section of the Kentucky State Medical Association at the Seventy-third Annual meeting was called to order at nine a. m., H. G. Reynolds, Chairman of the Section, presiding.

THE CHAIRMAN: On account of the limited time in which we will have the reports today, we will have to adhere to the rule regarding the length of papers and discussions.

The first item on the program is the reading of the minutes of the last Convention.

Secretary of the Section, G. C. Hall, of Louisville, read the minutes of the Convention on October 16, 1922, at Paducah.

S. G. DABNEY: I move the minutes be approved as read. The motion was seconded and carried.

THE CHAIRMAN: The next order of business is the report of the Council. On account of my absence for about three months recently in Europe, I don't know just exactly what there would be to report. Dr. Dabney, you were the President last year and a member of the Council. Is there anything particular that you can report?

S. G. DABNEY: I have not heard of anything brought before the Council to report now, Mr. Chairman.

THE CHAIRMAN: Next is the election of new members.

THE SECRETARY: The following new members have been properly proposed and approved by the Judicial Council.

W. F. Alvey, Elizabethtown; G. Bedford Brown, Jr., Lexington; L. P. Molloy, Paducah; J. F. Reynolds, Mt. Sterling; Robert Sory, Madisonville; C. R. Tanner, Henderson; Claude W. Trapp, Lexington; Samuel M. Baxter, New Albany, Ind.; Wm. T. Bruner, Louisville; Octavus Dulaney, Louisville; J. H. Hester, Louisville; Wm. C. White, Louisville.

I move their election, the motion was seconded and carried.

SECRETARY: I would suggest, Mr. Chairman, inasmuch as I have two other applications, those of Dr. Drake, of Bowling Green, and Dr. Marks, of Lexington, which were not received in time for action at this meeting, that I have some blank applications here, and any of those desiring membership in the Section can fill them out at this meeting and it will facilitate the handling of these cases for next year.

I move that Dr. Shambaugh and such members of the Eye, Ear, Nose and Throat Section as desire election in the Section be extended the privilege of the floor during the meeting, also including the general members, the motion was seconded and carried.

THE CHAIRMAN: Under unfinished business a resolution presented by Dr. McClure at last year's meeting laid over until this year. Dr. McClure, if he has that resolution prepared, may present it now.

A resolution was presented regarding the representation in the general session for Eye, Ear, Nose and Throat papers. What disposition was made of that?

THE SECRETARY: Those resolutions were presented to Dr. McCormack and he promised, and has fulfilled the promise, to give us adequate representation on the general program, so that matter is disposed of.

W. B. McCLURE, Lexington: Mr. Chairman, I suggested that plan in good faith, but after conferring with a number of members of the Section who are interested, I have decided not to press the matter to which you referred a moment ago. I really think it is a good thing, but the Secretary of the State Association thinks that we had best not do it. I defer to his judgment and it will not be pressed.

THE CHAIRMAN: Under new business is the report of the Committee on Trachoma that was to confer with the State Board of Health relative to some trachoma matters. I am Chairman of that Committee, and after quite a bit of correspondence and trouble we finally succeeded in meeting the State Board of Health and had a conference with them regarding Dr. Kobert's work and some reports that had been made by him, or at least were said to have been made by him, in the Journal of the American Medical Association regarding the number of cases of trachoma that he had diagnosed, operated and treated and reported in the Journal.

This Committee went before the State Board of Health and after conference at which Dr. Kobert was present we concluded, and if I am wrong in this statement I hope that Dr. Stucky who I believe is the only other member of the Committee present will correct me, it was agreed that Dr. Kobert stated that the report was not correct or exactly correct as reported in the Journal and that he had been doing this work for twelve or eighteen months and had familiarized himself to a great extent with it. The Committee concluded, after he had promised to go before the Ophthalmological Section of the American Medical Association and stand an examination, that possibly it would be better to recommend to you that we leave things just as they are and leave Dr. Kobert his position because of the experience he had had during this time that possibly would make him the best man available for the purpose. Am I correct in that, Dr. Stucky?

J. A. STUCKY, Lexington: Yes. We also added the American Academy of Opthalmology.

THE CHAIRMAN: So we would recommend to you that in our opinion that is the best disposition of the matter.

As this Committee was only appointed for this specific purpose, I suppose it will be discharged.

The next order of business is the election of officers. In that election is included member of the Council to succeed J. O. Carson of Bowling Green who was elected to serve two years. The first in order is the election of President.

The following officers were elected: W. B. McClure, Lexington, President; R. W. Bledsoe, Covington, Vice President; G. C. Hall, Louisville, Secretary; I. A. Lederman, Louis-

ville, Treasurer; H. G. Reynolds, Paducah, Councilor.

THE CHAIRMAN: Next in order is new business.

S. G. DABNEY: I think it would be a gracious thing for the Section to pass a resolution extending the hopes of the Section for the speedy recovery of Dr. Pfingst. I make a motion that the Secretary, as the representative of the Section, be instructed to write Dr. Pfingst, telling him of our regrets at his recent illness and that we are glad he is on the road to recovery.

I. A. LEDERMAN: We have suffered the loss of two of our members, Dr. Gibbons and Dr. Pritchard, and I think we should take suitable action. I don't believe it is necessary to appoint a Committee. I move that the Secretary write a letter of condolence to the families of the deceased members, and that a copy be spread on the minutes.

THE CHAIRMAN: It is not necessary to put those two motions to vote; they will be complied with.

THE SECRETARY: I wish to say in reference to Dr. Pritchard that I had written him expressing regret last year that he was unable to attend the meeting at Paducah, and got a letter in reply from Mrs. Pritchard together with a notice of his death, and so I have already written Mrs. Pritchard regretting the occurrence and expressing the sympathies of the Section.

THE CHAIRMAN: Is there anything else under new business? If not, we will proceed to the scientific program.

J. A. Stucky, Lexington, read a paper entitled "Treatment of Acute and Sub-Acute Empyema of the Nasal Accessory Sinuses."

R. W. Bledsoe, Covington, read a paper entitled "Foci of Infection above the Collar Bone and the Importance of their Early Recognition."

These two papers were discussed by George E. Shambaugh, Chicago, W. B. McClure, A. L. Bass, S. S. Watkins, C. T. Wolfe, S. G. Dabney, J. D. Heitger, G. F. Doyle, Octavus Dulaney, I. A. Lederman, S. M. Marks, Walter Dean, and in closing by the essayist.

George F. Doyle, Winchester, read a paper entitled "Report of a Case of Tuberculosis Mastoiditis Treated with the Actinic Rays," which was discussed by J. A. Stucky, R. W. Bledsoe, S. S. Watkins, S. G. Dabney, Octavus Dulaney, Walter Dean, G. C. Hall, R. H. Cowley, and in closing the essayist.

S. S. Watkins, Louisville, read a paper entitled "Treatment of Diphtheria of the Larynx." This paper was discussed by S. G. Dabney, A. L. Bass, J. A. Stucky, J. D. Heitger, I. A. Lederman, M. L. Pipes, and in closing the essayist.

THE CHAIRMAN: This closes our program for the afternoon and the meeting adjourned until 7 P. M.

SECOND SESSION—7:00 P. M.

The meeting was called to order at seven o'clock by W. B. McClure, of Lexington.

THE CHAIRMAN: Ladies and gentlemen, the Eye, Ear, Nose and Throat Section of the Kentucky State Medical Association, which but a short year ago was but an infant in arms, has grown and developed into quite a husky lad and gives promise in the not far distant future of being an organization of which the parent association may feel justly proud. Already our family has extended beyond the borders of our state, and as a result we have with us this evening from a distant city a distinguished guest, and I am going to ask the orator of our Association, Dr. J. A. Stucky, to present the speaker of the evening.

J. A. STUCKY: Mr. Chairman, Ladies and Gentlemen: I assure you it is a very great pleasure to the members of this Society to have other members of the medical profession and their wives and sweethearts to enjoy with us the pleasure of the evening.

The speaker is no stranger to the medical profession either in America or Europe. Wherever otolaryngology is known from a scientific standpoint the name and the work of the speaker of the evening is known. I am especially glad that he is with us tonight for the benefit of the younger members of the profession. Only two members of the profession of otolaryngology in Kentucky who began in the good old days are here. They blazed the way, and younger men today are paving that way.

I have watched the progress of our guest for years. We of the entire medical profession are proud of George E. Shambaugh, Professor of Otolaryngology of the University of Chicago, who will now address us on something practical, relating to the problems of middle ear disease. (Applause).

George E. Shambaugh, Chicago, then delivered his address on "Some Clinical Problems of Suppurative Otitis Media."

THE CHAIRMAN: I am sure I voice the sentiment of every one present when I say at we have not only enjoyed but have been wonderfully entertained and benefited by the lucid talk which Dr. Shambaugh has given us this evening.

The meeting adjourned at eight o'clock sine die.

GAYLORD C. HALL,
Secretary of the Section.

ORIGINAL ARTICLES

HORSESHOE KIDNEY WITH EXTRA RENAL PELVIS, SUCCESSFUL HEMINEPHRECTOMY.*

By Lee Kahn, Louisville

Congenital malformations occur probably oftener in the kidney than in any other organ in the body. These may be conveniently grouped as to size, number and shape. The anomalies in shape are in most instances of the fusion variety of which the so-called horseshoe kidney is the most common type. At the Pathological Institute of Berlin 6 horseshoe kidneys were found in 6200 autopsies; Morris from 18244 autopsy records of four London hospitals found 19; in 68000 autopsies Carlire and Gerard found 80 and in 2479 autopsies Federholf found 3 horseshoe kidneys. This aggregate of statistics strikes a ratio of one horseshoe kidney in every 879 bodies. However the operative frequency of a diseased horseshoe kidney is much higher. Israel found 5 in 800 kidney operations, Morrison 2 in 200 and the Mayo Clinic 17 in 2424, averaging 1 in 143 operations. The undiseased horseshoe kidney rarely shows symptoms and is discovered usually in an abdominal operation or at autopsy. Only when a pathological complication arises does its recognition become important.

Although the fused kidney is of low incidence it should be regarded as more than a mere curiosity for it assumes both clinical and surgical importance, because its clinical recognition is very difficult and because its surgical access is much harder than in the case of a normally situated kidney. Acquaintance with this queer anatomic deviation is therefore essential to the surgeon who would avoid the perplexity of its unexpected encounter in the course of operation. Toward this end a study of renal embryonic development is profitable and offers a clear explanation of this irregularity.

It will be remembered that the primitive kidney is a pelvic organ derived from the renal body with its cap of metanephric blastema. In the embryo of 5 mm. the renal bud which ultimately becomes the pelvis is given off by the Wolffian duct as a diverticulum, the caudal tubular portion of the duct becoming the ureter. The renal blastema, a large group of cells of mesoblastic origin, surrounds the renal bud and becomes the secretory portion of the kidneys. In the embryo of 10 mm. the two kidneys are bean-shaped and their upper borders are at the pelvic brim. At the end of the 5th week (an embryo of 14 mm.) the ascending kidneys, parallel to each other in the mid-lumbar region, rotate bringing their hila (which up to this time have been directed ventrally) toward the midline. At about the 9th week the ascent of the kidneys is complete and the upper poles reach the last dorsal and upper lumbar vertebrae (the embryo measuring from 25 to 30 mm. in length). Fusion of the anlagen occurs before the kidneys ascend from the pelvis, before the 7th week; the more complete the fusion the lower will be the position of the kidney and the more difficult its surgical approach. The fused kidney may lie as low as the pelvic brim and in pregnancy obstruct normal delivery. In the horseshoe kidney fusion is usually at the inferior poles. In Robinson's collected cases of horseshoe kidneys 90% were fused at the lower poles, in the remainder it was reversed; when the reverse exists the kidneys fused at their superior poles usually are higher in the abdomen than those in which the commissure is below. The case we present is of this rarer variety of horseshoe kidney—the superior poles being united and the concavity directed downward.

According to C. H. Mayo hydronephrosis is the most frequent complication and is most likely to occur in moderately young individuals. When the right kidney is so affected its early recognition is quite difficult for appendicitis, cholecystitis and torsion of a mobile cecum must be then differentiated.

Interest attaches to the following case in that it represents the rarer form of horseshoe kidney with upper polar fusion and presents in addition the extremely unique feature of an extrarenal pelvis.

This youth age 17 years was seen with Dr. John Kremer in an attack of right sided abdominal pain. Its sudden onset with fever,

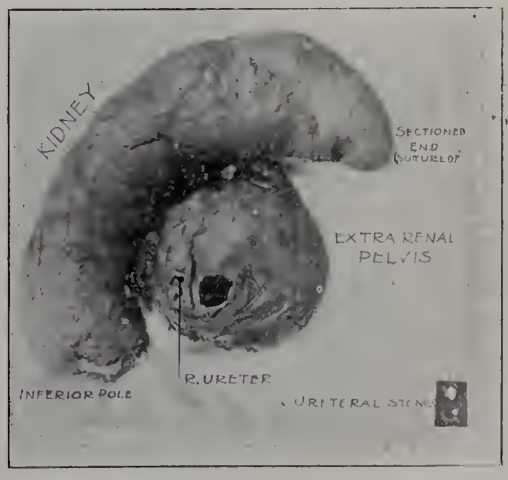


Fig. 1. Resected segment of horseshoe kidney showing extra renal pelvis.

*Read before the Jefferson County Medical Society,



Fig. 2. Segment of horseshoe kidney rotated half turn to left, its pelvis is rotated half turn upward.

vomiting and a mass palpable under the tense right rectus muscle led us to believe we had an acute surgical abdomen and to decide on immediate operation. Under deep anesthesia a dumb-bell shaped mass behind the rectus muscle could be felt; a vertical incision here demonstrated it to be retroperitioneal and fluctuant and the exploratory needle proved it an acute hydronephrotic sac. In establishing an extraperitoneal pyelotomy drainage tract the ascending colon was with decided advantage mobilized median-ward by dividing the outer, shorter peritoneal leaf. A 12 F. catheter anchored in the pelvis was brought out through a stab-wound in the loin and by reuniting the divided peritoneal leaf it was excluded from the abdominal cavity.

All went well after the operation until the tenth day when traction to withdraw the catheter caused it to break at its anchoring stitch. With the fluoroscope we tried unsuccessfully to recover through the sinus tract the retained fragment. The next day by the original transperitoneal route the broken catheter was removed from the pelvis. Catherizing the ureter from above the ureteral catheter encountered stones at the uretero-pelvic constriction and when these were removed nephrectomy was deemed best. Accordingly the kidney was shelled out from below upward not until we met unusual difficulty in delivreing the upper pole was a horseshoe kidney suspected. The kidney was sectional through 6 cm. breadth of gland tissue where it crossed the vertebral column. The patient made a prompt and satisfactory recovery, the passage of gravel with the urine being the only incident worthy of mention in his convalescence.

Remarks.—From a surgical standpoint the possibility and importance of fused kidney can scarcely be overemphasized.

This case is representative of the rarer type of horseshoe kidney and with this anomaly a completely extrarenal pelvis is associated.

The photographic detail of Figs. 1 and 2 makes unnecessary further description of the resected kidney segment.

The complicating hydronephrosis was evidently caused by obstructing stones at the uretero-pelvic angle.

There was no abnormality of genital organs.

Since operation all his drinking water has been distilled, and throughout the two years that have elapsed this patient has been in perfect health.



Fig. 3. Patient two years after heminephrectomy.

LUMINOL IN THE TREATMENT OF EPILEPSY.

By F. G. LaRue and H. T. Thornburgh
Eastern State Hospital, Lexington.

The attached summarized tabulation of data gathered during the last half of the fiscal year proves rather conclusively the efficacy of Luminol as an essential element in the treatment and conduct of cases of epilepsy.

This group of Epileptics has remained practically unchanged, as far as personnel is concerned, during the entire six months' period. Strenuous efforts have been made to bring the efficiency of reporting to a point of certainty and accuracy.

These patients have received in addition to Luminol, after the first four months, a dose of castor oil twice a week, or more when indicated. No special attention has been given to diet, although this should be considered an important part of the treatment and would undoubtedly be the means of promoting a further decrease in the number and severity of the seizures and the consequent general improvement in the case. It is impossible at this time to permit special diet entering into the care of these cases, as that would primarily require a segregation of the cases under treatment.

This tabulation does not require a general analysis. The figures may be considered authentic, as great care has been taken during the six months to see that observation, reporting and administration of Luminol and oil has been properly attended to; and in some instances the dosage has been increased and in others decreased, as indicated, one tablet of Luminol being the minimum and three the maximum dose.

In no case has Luminol produced symptoms of hypnosis to any degree whatsoever, or any other appreciable unfavorable symptoms.

It would be interesting to be able to note the number of seizures as well as the general condition of this group prior to this six months' period, but no authentic record is available. However, it is known that cases without treatment, as well as those having indifferent treatment, were running about an average course without any appreciable or significant improvement either as to number and severity of seizures or as to general mental and physical status.

It will be readily seen from the tabulation that there has been a marked improvement in the physical condition of these patients, and it is true that in almost every instance there has also been a pronounced improvement in the temperament and disposition as well as in the psychosis, and a consequent lessening of the usual deterioration. It will be noted that in all but a few of the cases there has been a marked increase in weight, some as much as 16 lbs. gain, and this among cases which have been at the Hospital for many years.

Under "Occupation", the cases that are designated "Ward work," are now capable of being detailed to an occupation of a more vocational type, five such cases having been so placed within the past week who prior to the intensive treatment were not available for any real constructive occupation.

We now have some 10 to 12 in this group who are ready for parole, providing a suitable home and environment can be found for them. Since the beginning of this treatment we have paroled four cases who are taking the treatment at home, and splendid reports are being received as to their progress. The cases are as follows:

Barney Fuller. Here 2 Years. No psychosis. No seizures. Par. May 5, 1923.

Wm. Sparkman. Here 5 Years. No psychosis. No seizures. Par. May 19, 1923.

Wilbert Miller. Here 2 Years. Stable. No seizures. Par. June 3, 1923.

Bradley Smith. Here 3 Months. Stable. 5 seizures. Par. June 6, 1923.

Cases designated under "Type of Seizure" as "severe and mild" are cases where the attacks are now milder, though at times they are as severe as formerly. When designated "severe", it means just that, but, as will be noted in many instances, the majority of the seizures are less frequent.

In the case of Thomas Mayfield, his seizures have been for the past five or six months of the "petit mal" type, whereas prior to this period the majority of them had been of "le grand mal" type. Also his psychosis has cleared up and a very marked change has occurred in his disposition and temperament, which heretofore had been exasperating.

The average length of stay in this hospital of the cases in this group is six and three-fourths years, ranging from a few weeks to 41 years. The average age of the cases is 38 years and 3 months, ranging from 17 to 74 years. One would be warranted in believing that many of these cases who have been here for many years might have been restored sufficiently to spend many years outside the hospital, providing the above treatment could have been instituted years ago, thus saving the state thousands of dollars, from the economic viewpoint, to say nothing of the human side of the problem.

The cost of this group of Epileptics to the state has already been very great. These 56 patients have been in this hospital 378 years, 1½ months. During the last two years the per capita cost has been $191 a year; prior

ANALYSIS EPILEPTICS—MALE WHITE SIX MONTHS' STUDY 1923

Name	Age	In Hosp.	No. seizures Jan.-June J.	F.	M.	A.	M.	J.	No. of attacks Improvement in June	Dose	Improvement Weight Jan.-May	Improvement General
Dennie Adkins	28 yrs.	2½ mos.	..	..	..	5	8	4	None	3		Improvement
William Bailey	28 yrs.	8 yrs.	30	29	28	18	13	3	10 per cent former no.	3	5 lbs. gain	Marked improvement
Joe Barker	58 yrs.	9 yrs.	17	7	3	3	4	4	23 per cent former no.	2	20 lbs. gain	Marked improvement
Robt. Barker	24 yrs.	2 yrs.	10	12	3	2	5	2	20 per cent former no.	2	3 lbs. gain	Marked improvement
Merida Barrett	23 yrs.	1½ yrs.	17	9	13	6	2	3	18 per cent former no.	2	11 lbs. loss	Marked improvement
Trimble Bevins	29 yrs.	3½ yrs.	5	13	3	0	7	2	40 per cent former no.	3	3 lbs. gain	Marked improvement, also
Guy Bunton	43 yrs.	7 yrs.	5	15	10	1	4	3	20 per cent former no.	2	2 lbs. gain	Marked improvement
Curtis Caudill	19 yrs.	5 yrs.	14	13	5	8	12	0	35 per cent former no.	3	10 lbs. gain	Improvement
Isaac Chambers	35 yrs.	11 yrs.	0	0	0	0	0	0	No attacks 6 mo.	2	6 lbs. gain	Marked improvement sin
Sam Cobb	74 yrs.	4 yrs.	12	4	0	1	0	1	8 per cent former no.	2	7 lbs. gain	Marked improvement
James Cole	26 yrs.	3 yrs.	20	6	5	7	4	4	20 per cent former no.	2	2 lbs. gain	Marked improvement
F. Cunningham	25 yrs.	6 yrs.	31	17	14	1	2	3	9 per cent former no.	2	4 lbs. gain	Marked improvement
Barney Fuller	35 yrs.	2 yrs.	0	0	1	1	0	0	No attacks now	2	6 lbs. gain	Marked improvement sin
John Hilton	53 yrs.	10 mos.	1	12	2	3	1	3	25 per cent former no.	2	2 lbs. gain	Marked improvement
Robert Jones	33 yrs.	8 mos.	35	29	3	2	5	7	20 per cent former no.	2	6 lbs. gain	Marked improvement
Wm. Lickert	18 yrs.	3 yrs.	11	36	29	9	3	6	17 per cent former no.	3	7 lbs. gain	Marked improvement
J. B. Lyttleton	69 yrs.	11 yrs.	0	0	0	0	0	0	No attacks 6 mo.	2	Same wt.	Marked improvement sin
Chester Merida	26 yrs.	3 yrs.	0	14	2	7	0	0	No attacks now	2	9 lbs. gain	Marked improvement
Thomas Mayfield	22 yrs.	3 yrs.	8	4	8	3	8	13	None	3	11 lbs. gain	Unimproved (see note)
Homer Miller	48 yrs.	9 yrs.	9	4	9	2	0	2	22 per cent former no.	2	16 lbs. gain	Marked improvement
Wilson Miller	31 yrs.	6 yrs.	2	3	3	0	1	3	None	2	10 lbs. gain	Mental improvement
Dan Murray	25 yrs.	4 yrs.	9	12	2	5	4	0	44 per cent former no.	2	3 lbs. gain	Marked improvement
Millard Nunnelly	62 yrs.	35 yrs.	7	4	0	2	0	1	14 per cent former no.	2	5 lbs. gain	Improvement
Alonzo Strothers	56 yrs.	14 yrs.	10	7	0	0	0	0	No attacks now	2	16 lbs. gain	Marked improvement
Matt Valentine	40 yrs.	9 yrs.	25	8	3	3	3	0	13 per cent former no.	2	12 lbs. gain	Marked improvement
James Ware	51 yrs.	18 yrs.	4	4	3	3	5	3	None	2	2 lbs. gain	Unimproved
James Wise	23 yrs.	6 yrs.	26	23	9	11	10	0	38 per cent former no.	3	? (too heavy to weigh)	Marked improvement
William Wolf	54 yrs.	10 yrs.	10	13	6	0	3	3	30 per cent former no.	2	17 lbs. gain	Marked improvement
Charles Wright	27 yrs.	9 yrs.	9	24	6	10	5	0	21 per cent former no.	3	1 lb. gain	Marked improvement
H. Clay Bedford	36 yrs.	2 yrs.	2	1	1	2	3	3	None	2	2 lbs. loss	Unimproved
George Mynheir	17 yrs.	11 mos.	0	0	0	0	0	0	No attacks 6 mo.	2	Same wt.	
Cornelius Sparks	28 yrs.	10 mos.	2	2	2	0	1	0	50 per cent former no.	2	8 lbs. gain	Improvement
Wm. A. Wolford	22 yrs.	3 yrs.	1	22	10	0	8	0	36 per cent former no.	3	9 lbs. gain	Marked improvement

Name	Age	In Hosp.	No. seizures Jan.-June J.	F.	M.	A.	M.	J.	No. of attacks Improvement in June	Dose	Improvement Weight	Improvement General
T. J. Disney	66 yrs.	10 yrs.	1	8	4	0	0	0	No attacks now	3	4 lbs. gain	Marked improvement
Robert Fletcher	32 yrs.	9 yrs.	11	0	0	1	5	2	18 per cent former no.	2	12 lbs. gain	Improvement
James Haley	27 yrs.	4½ yrs.	5	17	6	2	4	0	23 per cent former no.	2	16 lbs. gain	Marked improvement
James Holtzclaw	63 yrs.	2 yrs.	1	1	0	1	0	0	No attacks now	2	6 lbs. gain	Improvement
Elijah McDowell	19 yrs.	5 yrs.	4	37	4	1	3	0	8 per cent former no.	2	8 lbs. gain	Marked improvement
Lewis McDowell	70 yrs.	41 yrs.	3	1	1	0	1	0	33 per cent former no.	2	7 lbs. gain	Marked improvement
George Morgan	64 yrs.	34 yrs.	1	2	1	3	0	0	No attacks now	2	15 lbs. loss	Marked improvement
Tom Preston	68 yrs.	5 yrs.	1	3	0	0	0	0	No attacks now	0	6 lbs. gain	Marked improvement
Frank Ratliff	18 yrs.	3 yrs.	5	10	5	4	7	2	20 per cent former no.	2	6 lbs. gain	Improvement
Hal Rogers	22 yrs.	2½ mos.	..	..	..	0	4	2	None	2	6 lbs. gain	No improvement
Harold Adkins	22 yrs.	5 yrs.	6	2	6	3	0	0	No attacks now	3	5 lbs. loss	Marked improvement
Lauza Amburgy	22 yrs.	6 wks.	..	..	..	..	0	0	No attacks here	3		Marked improvement sin
Lewis Artis	17 yrs.	3 mos.	..	..	..	11	6	13	None	3	2 lbs. gain	No improvement
Vivian Kiger	25 yrs.	1 yr.	2	0	4	0	1	3	None	3	4 lbs. gain	No improvement
Willie Mann	17 yrs.	1 yr.	11	4	5	2	4	0	36 per cent former no.	3	6 lbs. loss	Marked improvement
Bradley Smith	26 yrs.	3 mos.	..	..	..	1	2	2	None	2	7 lbs. gain	No improvement, except
Charles Dickey	44 yrs.	9 yrs.	0	1	2	1	0	0	No attacks now	2	5 lbs. gain	Improvement
Wilbert Miller	40 yrs.	2 yrs.	0	0	1	0	0	0	No attacks now	2	12 lbs. gain	Improvement
Logan Salyers	59 yrs.	10 yrs.	0	0	0	0	0	0	No attacks 6 mo.	2	6 lbs. gain	Improvement
S. T. Clark	71 yrs.	1 yr.	0	0	0	0	0	2	None	2	4 lbs. gain	No improvement, (No tr
John Corns	70 yrs.	5 yrs.	1	0	1	1	0	0	No attacks now	2	9 lbs. gain	Marked improvement sinc
Austin Gaines	43 yrs.	13 yrs.	2	1	1	1	4	4	None	3	11 lbs. loss	No improvement
B. G. Cockerham	52 yrs.	6½ yrs.	6	0	0	0	0	0	No attacks now	3	Same weight	Marked improvement sinc

Total attacks by months.... 392 434 224 147 162 103

Type of Seizure	Remarks	Occupation
	No deterioration. Psychosis at time of seizures	None
	Quiet and orderly. Fairly stable. Little deterioration.	Tailor shop
Formerly severe	Quiet and orderly. Fairly stable. Little deterioration.	Toy shop
Formerly more so	Quiet and orderly. Fairly stable. Little deterioration.	Toy shop
and mild	Mentally unstable. Easily controlled.	Ward work
ow	Mentally unstable. Periodical frenzy. Improving	Ward work
Formerly more so	Mentally unstable. Deterioration	Ward work
and mild	Mentally unstable. Quiet and orderly	Ward work
		Toy shop
ıd severe	Quiet and orderly. Fairly stable	Ward work
and mild	Quiet and orderly. Fairly stable	Ward work
ıd severe	Mentally unstable. Deterioration	Ward work
	Mentally stable. No psychosis. No deterioration	On truck. (Paroled now)
and mild	Mentally stable. Quiet and orderly	Ward work
aud mild	Mentally unstable. Periodically disturbed	Ward work
and mild	Mentally unstable. Quarrelsome	Ward work
ild. Never fell in one. Little more than vertigo		Ward work
	Epileptic deterioration. Quiet	Ward work
	No psychosis. No deterioration. Temperamental	Painter
Little more than vertigo or ringing in ears	Mentally unstable. Deterioration	Ward work
ow. Severe until 2 mos. ago	Unstable. Quarrelsome and violent. Dangerous	Ward work
ıd severe	Quiet and orderly. Fairly stable	Ward work
and mild	Mentally unstable. Deterioration. Quarrelsome	Ward work
Very rarely falls	Quiet and orderly. Fairly stable	Ward work
ıd severe	College graduate. Quiet and orderly. Deterioration	Ward work
Mild now	Quiet and orderly. Fairly stable. Privileged man	Ward work
and mild	No psychosis. No deterioration. Stable	Ice man
ıd few	Quiet and orderly. Fairly stable	Ward work
	Mentally unstable. Deterioration	Ward work
ıd severe. Does not always fall	Quiet and orderly. Mentally unstable. No deterioration	Tailor shop
	Quiet and orderly. Fairly stable. No deterioration	Tailor shop
formerly; now mild	Quiet and orderly. Fairly stable. No deterioration	Farm
Rarely falls	Quiet and orderly. Fairly stable. No deterioration	Truck

Type of Seizure	Remarks	Occupation
	Little mental deterioration. Quiet and orderly	None
	Mentally unstable. Deterioration	None
	Mentally unstable. Deterioration	None
	Mentally unstable. Deterioration	None
	No mind. Mental deterioration	None
	Quiet and orderly. No deterioration	None
	No mind. Quiet. Mental deterioration	None
	Unstable. No deterioration	None
ild	Deterioration. Unstable. No mind	None
	Feebleminded. Deterioration	None
and mild	Stable. No deterioration	Caretaker of cottage
octurnal only	Stable. No deterioration. No psychosis	Gate
	Stable. No deterioration	Tailor shop
	Stable. No deterioration	Tin toy dep't.
	Fairly stable. No deterioration	Tailor shop
and mild	Stable. No deterioration. On parole now with treatment at home. No psych. now	Dining room. (Paroled now)
	Fairly stable. No deterioration	Farm
ıd severe	Stable. No deterioration. On parole now. Treatment at home. No psych. now.	Mattress shop. (Paroled now)
	Fairly stable. No deterioration	Farm
Nocturnal only	Stable. No deterioration. Doubtful case. Treatment just started	None
Never falls now. Used to fall	Fairly stable. No deterioration	Ward work
	Stable. No deterioration. (At TB Hosp. now)	Truck, until sent to TB.
	Unstable. No deterioration	None

to two years ago, it was $225, a year. The cost would therefore be as follows:

Recent cases (past two years) at $191 rate, $1,647.00.

Old cases (past two years) at $191 rate, $16,426.00.

Old cases (prior to 2 Yrs.) at $225 rate, $63,787.00.

Total, $81,860.00.

The cost of Luminol for this group, for the six months has been approximately $456.12.

It would be impossible to estimate accurately the amount of money that could have been saved by early treatment; however, it is very obvious that in the future large sums of money can be saved for the state, though this is really of the least importance, for by proper treatment the Epileptic can be given a chance to at least rehabilitate himself and become something besides a ward of the state and a burden to the taxpayer. This is certainly possible in many instances, and a further and continued investigation will no doubt give us some tangible estimates.

Total decrease from January to June.

January 420 seizures.

June 109 seizures.

A decrease of 74%

If there is one iota of contra-indication in the treatment of epilepsy as above reported, it is not to be conceived by the writer, and as to the efficacy of this treatment it has been demonstrated, not as a curative agent, but as an essential element in the armamentarium now available in this Hospital.

Diagnosis of Incipient Tabes.—Morin calls attention to the loss of the biceps femoris tendon reflex—even on one side—as the most reliable early sign of tabes. The reflex is a contraction of the biceps femoris elicited by tapping its tendon in the popliteal space, just above the head of the fibula. This reflexe peroneo-femoral posterieur was described by Guillain and Barre in 1916, and experience has confirmed the value of its abolition as an early objective sign of a tabetic lesion. In a case described, atrophy of the optic nerve had developed after an accident to the head. There were no symptoms except the impairment of vision and the abolition of this biceps femoris reflex, but during the following year other symptoms of tabes slowly developed. The evolution of tabes is progressive, except for longer or shorter stationary periods, and the progress is a regular progression from below upward. Hence the reflexes in the legs are the first to show the effect. He has never encountered a case of tabes with loss of reflexes in the arms while those in the legs were intact. He noted sphincter disturbances in 58 per cent. of his hospital cases of tabes.

SPINA BIFIDA WITH HYDROCEPHALUS. CASE REPORT.*

By Guy P. Grigsby, Louisville

Patient, J. L., a male, aged eighteen months, seen in the Children's Hospital. A few days after birth a small tumor or protrusion was noticed near end of the spine. No treatment was instituted, the parents being informed that the condition was hopeless, and in all probability the child would soon die as a result. The tumor had gradually increased in size until the date of our observation. The child was brought to the hospital to see if anything could be done for his relief.

Examination: When seen by me on January 25th, 1923, the child appeared undersized for its age and very anemic. The head was markedly hydrocephalic, the anterior fontanelle widely separated, the lower extremities small in proportion to remainder of the body. There was paralysis of the left leg. The child seemed to have control over the vesical and rectal functions. There was a large tumor at lower end of spine situated over the last three or four lumbar vertebrae which contained probably a pint of fluid. The upper part of the sac was very thin and rupture seemed imminent. There was marked increase and decrease in size of the tumor when the child cried. Blood Wassermann negative. Roentgen-ray examination (Dr. Keith) showed absence of the neural arches of the last three lumbar vertebrae.

The patient was seen in consultation by Drs. Bruce and Pickett, who, despite the apparently hopeless condition, felt that surgical intervention was the only chance. Certainly the case from a surgical standpoint did not offer much, because of the large size of the opening in the spine and the type of the spina bifida. Moreover, the child had hydrocephalus which it was thought would more than likely increase following closure of the spinal defect.

Clinical diagnosis: spina bifida with hydrocephalus. Operation advised and accepted by the parents.

Operation, February 1st, 1923: Under light ether anesthesia (Dr. Schoonover) an incision was made around base of the tumor. The sac was dissected free from surrounding structures and when opened about a pint of spinal fluid escaped. The sac was emptied gradually and the effect upon the child noted. Evidently the procedure gave rise to no appreciable shock. Exploration of the interior of the sac showed that the cord and its structures were flattened and spread upon the walls

*Clinical report with exhibition of patient and photographs before the Louisville Medico-Chirurgical Society.



Spina Bifida with Hydrocephalus.

for a distance of about one inch on either side. That portion of the sac above the cord was excised care being observed to prevent injury to the cord structures. The remaining portion of the sac was enfolded upon itself by a series of Lembert sutures of fine silk. This dealt very satisfactorily with the cord and sac which were then returned to the spinal canal.

Closure of the cleft in the spinal canal was effected in the following manner: A trap door transplant with its base at the edge of the cleft left attached was made from the fascia and muscle. This flap was then reflected and sutured to the opposite side of the cleft with chromic catgut. A second flap of fascia similar to the first was then dissected free and reflected over the first flap and sutured in that position. This made a splendid closure of the defect. The skin edges were widely separated and closure was made with difficulty. It was necessary to undermine the skin before this could be accomplished. Even then at the center of the incision there was some tension on the sutures.

The little patient did splendidly following the operation. The next day, however, the temperature rose to 106 degrees F., but despite this the child did not have the appearance of being extremely ill. The temperature gradually receded and was normal on the tenth day. The wound healed promptly and without incident worthy of note. For three or four days following the operation there was some increase in the hydrocephalus, in fact this persisted until the end of the second week. Since then there has been a gradual decrease in size of the head and at present its size and shape are nearer normal than prior to operation. Despite the fact that for the last few days the child has had a severe cold, he has been less fretful than formerly, and marked improvement has occurred in his mentality.

The outstanding features of interest in the case seem to be:

(1) The unusual size of the spina bifida and the large amount of contained fluid:

(2) That the rather sudden release of the spinal fluid apparently had no deleterious effect upon the child:

(3) That the left-sided paralysis which existed prior to operation has now disappeared:

(4) That the extensive spinal defect was satisfactorily closed in the manner stated:

(5) The reduction in size of the head and decided improvement in mentality during the last ten days.



Spina Bifida with Hydrocephalus.

DISCUSSION.

Morris Flexner: Dr. Grigsby is to be congratulated on his operative result in the case reported. The question arises: what is going to eventually happen to this child? There is no doubt that Dr. Grigsby was dealing with a meningomyelocele, and considerable improvement has occurred since the operation. The left leg of the child was paralyzed before operation, and movements are not yet what they should be. However, the child's legs are weak and it is a question whether he will ever be able to walk.

Dr. Grigsby and I expect to make some further investigations in this case to determine the amount of hydrocephalus and the type. As probably all of you know, Dandy and Blackfan a few years ago divided hydrocephalus into two distinct types, viz., (a) the communicating type, and (b) the obstructive type. In one, obstruction occurs before the fluid reaches the subarachnoid space. The fluid does not escape through the foramina of Luschka and Magendie and does not reach the subarachnoid for absorption. In the other type fluid does not reach the subarachnoid space, but through some fault in mechanics is not absorbed. The type present can be detected by means of phenolsulphonephthalein injection into the lateral ventricle, associated with lumbar puncture. We are going to do that in this case to determine exactly how much hydrocephalus and the type the child has. I think ventriculography should also be done to

determine the amount of involvement of the cortex. This in itself will help to demonstrate the type of hydrocephalus we are dealing with.

Personally I am not as optimistic about this case as is Dr. Grigsby. I still believe we are going to have an hydrocephalic idiot before we get through with it. Had Dr. Grigsby been able to operate on the child earlier in life I believe his chances would have been very much better.

Dandy and Blackfan have investigated many cases of hydrocephalus associated with meningocele, and the following is from one of their articles on this subject:

The frequent association of a meningocele with internal hydrocephalus has long been known, and quite frequently an interval hydrocephalus has been observed to develop following the removal of a meningocele. This seems to us most probably due to the removal of the absorbing area of the meningocele, which was just sufficient (or nearly so) to maintain the balance between the production and absorption of cerebro-spinal fluid. With its removal the production of fluid becomes greater than absorption causing increased dilatation of the ventricles.

In eleven patients with communicating hydrocephalus, three had a meningocele; and in fifteen cases of obstructive hydrocephalus, a meningocele was present in three. The formation of a meningocele in conjunction with a communicating hydrocephalus, arising in early intra-uterine life, seems explainable by the pressure which causes the cerebrospinal fluid to take the path of least resistance, usually in the lumbar region, which is the last part of the spinal canal to be bridged over. The presumption is natural that a meningocele signifies an increased pressure of cerebrospinal fluid in the spinal canal, or a communicating hydrocephalus. But that this is not necessarily true is shown by its existence in three cases of obstructive hydrocephalus. In one, however, the hydrocephalus was originally of the communicating variety, and when first seen by us was in the last stages of the transition to a total obstruction. The other case was a myelocystocele, the cerebrospinal fluid having no communication with the sac, which was now blind, and reach the original communication with the central canal of the spinal cord closed in several places. The relationship of the meningocele to the obstructive hydrocephalus in the remaining case could not be ascertained because of the absence of a pathologic examination.

In all cases with a meningocele which have recently come under our observation, careful studies have been made of the amount of absorption from the spinal canal in addition to other evidence of internal hydrocephalus. Only in those cases in which a normal absorption is present from the spinal canal have we removed the meningocele, and in these cases have observed no subsequent secondary effects on the brain. The phenolsulphonephthalein output from the spinal canal we regard as a thoroughly reliable index of the function of the meninges, and know of no other way in which a safe decision can be made in the operative treatment of a meningocele." (Dandy and Blackfan).

It is recognized that surgery offers the only hope in cases of this kind. One observer has tabulated fifty-seven cases similar to the one before us, of which ten or twelve were saved by operative treatment. Untreated practically all the patients die in the second year either from meningitis or some intercurrent affection.

S. J. Meyers: Dr. Grigsby is to be congratulated on his excellent surgery in the case reported. I feel rather optimistic about the future of this child from the result thus far attained. Dr. Flexner may be correct, that this child will develop into an idiot, but he certainly does not look iodiotic now. The parents doubtless feel very much better about the child anyhow, whether it lives or dies, because Dr. Grigsby has removed the tumor which has hitherto been an eyesore to them.

H. E. Schoonover: Prior to the operation this child appeared to take no interest in anything and rested on his abdomen all the time. As he lays on the table tonight you will observe he notices everything around him, plays with articles near him, etc. So far as appearances go the child has markedly improved since the operation, and I understand there has been considerable change for the better in his mentality.

Dr. Grigsby did not mention the fact that the parents of this child have one other who is perfectly normal.

Cuthbert Thompson: Dr. Grigsby is to be congratulated on the result of his operation in this case. The child has improved in every way, the paralysis has practically disappeared, the size of the head has gradually become less, and the scar at the site of the operation is firm.

I do not believe that in this case the foramen of Magendi was obliterated as the size of the head is still diminishing. My theory is that, when the intra-cranial pressure was diminished by draining of the cerebro-spinal fluid during the operation, the absorbing tissues resumed their function of transferring the fluid into the venous sinuses.

I hope Dr. Grigsby will give us a further report of this case in a few months.

J. G. Sherrill: I wish to "take my hat off to Dr. Grigsby." I have seen a number of patients with spina bifida and have never yet been able to get one of them to live for any length of time. In one case I thought a good result would certainly be secured, but after being closed for a while leakage began and persisted and the pa-

tient eventually died of meningitis. Some of these patients have a very high temperature for which we have been unable to account. I remember removing a large cyst from the sacro-coccygeal region; the operation was completed without any shock and apparently there was no communication between the cyst and the spinal canal; but the patient without any infection suddenly developed a very high temperature which persisted until death. It is possible that the cyst communicated with the spinal cord, though no communication could be detected. There must be something in this region intimately associated with the heat center, by nervous connection, because the patients have a very high temperature without any infection.

I am glad Dr. Grigsby mentioned the flap operation. It is oftentimes quite difficult to get enough tissue to cover the defect.

I congratulate Dr. Grigsby on the result of his operation. Like Dr. Meyers, I would not abandon hope in this case, I would keep the patient under close observation, because some of these hydrocephalic children operated upon for meningocele and cystocele sometimes get entirely well. I believe it would be a dangerous procedure, based upon my previous experience, to introduce a needle into the affected region of the spine, because if leakage is started difficulty would be encountered in stopping it. I would be very slow about recommending any manipulation on this child purely for scientific reasons so long as he is doing well. Of course I would not care to be put in the attitude of interfering with scientific investigation, but so long as the child is doing well my advice would be to let him alone.

The causation of spina bifida and hydrocephalus is a subject worthy of study but is not under consideration now. These children are born with this condition existing from failure to unite of the lower part of the spinal canal. Nearly every child with spina bifida also has hydrocephalus. It is my belief there are two conditions responsible for the development of these anatomic defects, viz., syphilis and tuberculosis, the latter probably being the most prominent cause. The great majority of these patients have a mild tuberculous meningitis which has been instrumental in causing the hydrocephalus.

Wm. J. Young: I do not see why there should be any greater objection to performing lumbar puncture on this child than on a normal patient for the purpose of obtaining spinal fluid for examination as outlined by Dr. Flexner. Of course the site of the former operation should be avoided. With this precaution in my opinion lumbar puncture can be done with the same degree of safety as in a normal child.

L. W. Frank: I have seen six cases of this kind, in five of which I either operated or assisted in the operation. The usual sites for meningocele are at the caudal end of the spinal column or in the cervical region. I have never seen one in the mid-portion of the spine or in the dorsal region. I have seen three cervical and three sacral meningoceles. In one case seen at the children's hospital the child had a four-plus Wassermann. There was an enormous meningocele in the aural region, but it was considered useless to operate on account of the syphilitic infection and the lack of mentality of the child. Death occurred within a short time from meningitis. The other five patients were operated upon and all made operative recoveries.

In operation of children where the meningocele is in the sacral region the greatest danger lies in infection from soiled diapers as it is difficult to keep these children clean.

The child before us is almost two years of age. The three patients that we operated upon for meningocele in the sacral region were all younger, one of them subjected to operation about four years ago being only six weeks old. No infection occurred, the child made a prompt recovery and was well a year afterward. The last one we saw, operated upon by Dr. L. Frank and myself, had a meningocele in the cervical region about the size of a hen's egg with a very small anatomic defect which was easily closed. In the cervical region the sac of the meningocele is easier handled than in the sacral region, on account of the fixed position of the nerve elements in the spinal canal. In the sacral region, the cauda equina being loose, and in many strands, not infrequently nerve elements are in the sac or fixed to the wall just as they were in the case reported, and one must be extremely careful in excising the sac not to cut away the nerve tissue. One not exercising the care Dr. Grigsby did in this case, can very easily sever a number of the nerve filaments with consequent increase in the paralysis. Dr. Grigsby is to be congratulated on his result in this case.

It is perfectly true that hydrocephalus has followed the operation for meningocele in a number of instances. However the longer the interval after operation, without development of hydrocephalus the greater is the probability of an ultimate favorable result, and in the case reported I am of the opinion that the patient will make a good recovery.

I cannot see any reason why lumbar puncture should not be made in the further investigation of this case. Of course I would not advise introducing a needle in the region of the operative scar, because the nerve trunks are adherent to the sac, and puncturing them one might just as well insert the needle into a nerve as between two nerves, but by going higher where the nerve tissue is not adherent to the sac or where the location of the nerve tissue is the same as in a normal individual, I can see no reason why lumbar puncture cannot be done with safety.

W. E. Gardner: The case reported is exceedingly interesting, and while we must give due consideration to the theory advanced by Dr. Flexner and substantiated by the statistics he has quoted, yet I am inclined to believe the ultimate result will be favorable in this case as the child has improved so much since the operation. I cannot help but feel hopeful, and if proper absorption and drainage continue, as was suggested by Dr. Thompson, I believe the child will recover.

So far as any intelligence test is concerned: It will be necessary to wait until the child is three years old before making an intelligence test, as it is impossible to get satisfactory cooperation before that age. The child may not be an idiot, he might become a low grade or high grade imbecile, if he does not become perfectly normal.

If the child lives we will all be interested in hearing what happens after he becomes three years of age, as at that time a satisfactory test of the intelligence can be made according to some of the approved methods which are now being used.

Guy P. Grigsby (closing): Having operated upon this child, and noting the marked improvement in his general condition, I am naturally very hopeful as to the ultimate outcome. Comparing the condition at the time I first saw the patient with his appearance at present, I can hardly recognize that it is the same child. Improvement has been greatest during the last ten days despite the fact that the child has had a cold and his temperature in consequence has been rather high.

In closing I wish to present a paragraph from the interesting book of Elsberg who is an authority on this subject:

"As the mortality of the operation has been very high in the first months of life, varying between 35 and 50 per cent, it is advisable to defer operation as long as possible. Many of the infants operated upon within the first few months of life died from the shock of the operation; others from meningitis due to infection, from marasmus, or from the complicating hydrocephalus. The immediate operative mortality is at least 25 per cent for the first year of life. Of course, the results will vary with the form of the spina bifida. Thus I have operated upon five meningoceles with five recoveries, upon seven meningo-myeloceles with only three recoveries. All of the patients over two years of age recovered nicely from the operation. I have seen one child with marked motor and sensory disturbances regain power in the paralyzed limbs." (Elsberg).

As the case under discussion was a meningomyclocele, of a rather exaggerated type, I feel that we should congratulate ourselves that the patient has made an operative recovery.

THE SCIENCE AND ART OF MEDICINE IN RELATION TO THE COMMUNITY.*

By Henry A. Christian, Boston

As time goes on, medicine, like many other things, becomes more and more interwoven into the interests of the community. What interest have I in the art and science of medicine, very naturally, you ask? What concern is it of mine whether medical education is adequately endowed? Why should hospitals and medical schools and boards of health spend money on research laboratories, or, at least, why should I, a citizen, be asked to help pay for them? Merely to ask such questions at once suggests to every thoughtful citizen some sort of an answer that inevitably suggests important community relationships.

Every one is deeply interested in keeping well and should he fall sick, his first thought is what can I do to get well? Hence he wants well trained physicians to call upon for treatment when ill. However, it is easier to prevent than to cure disease. So prevention is perhaps of greater importance to the community than cure, while cure is of more immediate importance to the individual.

Both the science and art of medicine concern themselves with prevention as well as with cure. Some of the most important discoveries of medical science relate to the preservation of good health and the prevention of disease. Most of them in application demand not alone something of the individual, but something of the group that goes to make up the community in which the individual lives. Community intelligence is a large factor in the successful application of medical knowledge in the prevention of disease. Hence, not alone is it important to the community to provide the facilities for medical education and medical investigation, but also it is important that the community makes possible for its citizens a fair degree of general education and a considerable degree of community wealth without which proper housing, proper sanitation and proper food are not possible as the fundamentally necessary basis for community health.

This is all very well, but what harm will come, you may ask, if these provisions are not made. In other words is there any real danger today that disease will bring any great harm to a community? Let me answer this by an example. Several years ago I was called to a small mid-western town to help in the care of a large number of typhoid patients. Here neglect of certain sanitary precautions, an injudicious attempt to save a few thousand dollars, and a tardiness to recog-

*Commencement Address, University of Louisville at Louisville, June 7, 1923.

nize a serious situation had resulted in a fearful epidemic outbreak of typhoid fever. Clearly the community was responsible for the situation.

To understand it, one has to go back some twenty years before the typhoid outbreak to the installation of a pipe line to convey to a collecting reservoir a part of the town's supply of water. In order to save some two thousand dollars this town installed, against expert advice, a pipe line composed of tile pipe jointed together with cement. Anyone should have known that in time, with the expansion and shrinkage induced by changing temperatures, cracking at the joints was sure to happen and that the flowing water, under low pressure as it was, would at times in different places only partially fill the pipe and produce suction that would drain into the pipe water from the surrounding soil. To make the possibility doubly sure, at one time a broken section was repaired by the introduction of a pipe of smaller bore. This, where it joined again at its lower end to the larger pipe, made a splendid suction pump. To make still more complete the possibility of disaster, this town had no regulations concerning the laying of sewers. If a man built a house, he merely ran his sewer out into the street and connected it in anyway he thought best to the main drain of the town. Now the scene was all set. It but remained for the coincidence of a wet season and a case of typhoid in one of the houses along the street. In time this came with the result that typhoid bacilli from this patient found their way into the leaky sewer, thence out into the water soaked soil and were finally sucked into the tile pipe conveying drinking water to run into the collecting reservoir and be pumped into every house in that town as part of a supposedly satisfactory drinking water. A very large part of the town's people very naturally drank this water, with the result that shortly many were sick, but the real cause was not suspicioned until some three weeks later when after the necessary incubation period the signs of typhoid became unmistakable. In a month some 882 out of a population of a little over 9,000 had sickened of typhoid fever.

As soon as it was recognized that typhoid was prevalent the state board of health was called in and within 24 hours the probable cause was recognized, the town's water supply was being chlorinated and numerous other precautions were underway to stop any further spread of disease. Within a short time the entire town's energies were concentrated on the care of its sick. Citizens were organized, the Chamber of Commerce was converted into a canteen, hosptials were improvised in dwelling houses, a church and an unused hotel, nurses were gathered and the situation was under control. A community's unintelligence, however, before the epidemic was over had cost the town perhaps not less than a half million dollars, though it is difficult to reckon in dollars the loss entailed by 882 cases of a disease such as typhoid of prolonged course with an incident death of 25 citizens. This was really the result of the attempt to save some two thousand dollars some twenty years before.

Now let us look at this episode in the light of the science and art of medicine in relation to the community. Ordinary sanitary precautions should have guarded against the possibility, but twenty years ago they were all too rarely taken. Medical science had unravelled the cause of typhoid, the path of infection and the mode of exit of the typhoid bacilli. All of this should have been common knowledge of a community. A better trained medical profession would have diagnosed the typhoid more quickly and a better organized method of reporting disease would have recognized sooner its epidemic proportions. The science of bacteriology had equipped the state board of health with the means of eliminating the bacilli from the water supply without making the water undrinkable. Recent investigations had revolutionized the treatment of typhoid so that less than half the number died in this epidemic than had ever happened in any other typhoid outbreak. Even for such a foolhardy community as this, great benefit came from the results of the art and science of medicine, but that community had had the opportunity to have escaped the entire thing as has every community which intelligently applies what today is common knowledge for all. Do not be confident that some such thing may not happen to your community. Remember that this community thought they were safe.

I might cite tuberculosis as a type of community problem. Here it is not an epidemic outbreak but a steady incidence of far too many cases of a disease really in large measure preventable, if an intelligent community conscientiously and thoroughly applies what the science and art of medicine has taught. Money needs to be spent, but is it not money well spent if it means more citizens living a life of happiness and efficiency? Those already diseased must be cared for. Some can be cured, but more important for the community, all can be taught how to cease being a danger to those in contact with them and thus the spread of the disease can be decreased. The community can be educated and housed and fed so as to resist entirely this decreased danger from instructed tuberculous patients and in time this dread disease can

be almost eliminated. Tuberculosis cannot be managed, however, unless an aroused community undertakes the fight against it.

Every modern hospital should beeome an educational centre for the eommunity. No longer is the hospital simply a place for the care of sick individuals, but it has a wide range of points of contact with many members of the community in which it is situated. Consequently, the hospital is a very important institution to eaeh community.

In the first place the hospital ministers to siek individuals. Often for poorer people to get the sick one out of the family into the hospital makes possible the return of the members of that family to productive activity out of which they have been kept by the neeessity for care of the siek one. Herein lies an economie advantage to the community in having a hospital providing free or small cost care of patients. Again often to get the sick into a hospital decreases the chanees for the further spread of disease, particularly contagious diseases.

A properly construeted, well-managed hospital is a source of instruction in better, cleaner living and improved cooking, not alone to the patient, but to those who come to visit him. Often here is given a first lesson in hygiene. Follow-up work is a growing factor of usefulness in the modern hospital and through the friendly visitor the influence begun in the hospital is carried into the home and permanently rooted there. Many diseases depend in large part for their treatment on dieting and it is neeessary to instruct the patient and his family in cooking an deven in purchasing foods in order that the doetor's treatment may be earried out. Here again edueation is spread into the eommunity.

An important part of the work of a hospital lies in the prevention of progression of chronic ailments which may not be completely curable and the avoidance of their complications. Judieious handling frequently can return to productivity a patient who cannot be cured and he ean be maintained in self-support for a eonsiderable period of time, thus decreasing the economic drain of sickness on the family and the eommunity.

The hospital is eonstantly educating nurses, resident doetors and members of the visiting staff. The great importanee to the community of the latter often is overlooked. The hospital in its activities is a post-graduate school for all physieians who work within its doors and here they can learn better methods of treatment to apply to patients in their homes.

All of these activities of the hospital are carried on with greatest effeetiveness in those hospitals whieh are intimately associated with medical schools and so direetly concerned in medical education. If you were to ask your physician to name the best hospitals of the eountry you would find that all of them that he named were conneeted with medieal sehools and busily engaged in teaehing elinieal braneches of medicine to under-graduate and post-graduate students of medieine.

If you look at a hospital simply as the place to treat a certain number of siek individuals and then turn to its annual expenditure of money, which in every good hospital is necessarily a very large one, probably you would say that the eost is too great and that it does not in its aeeomplishments justify the outlay of so much money on top of the great initial eost of its plant. On the other hand, if you delve deeper into its aetivities and evaluate them in relation to the community which it touches at many points, as I have already illustrated by eertain examples, you will find that the great good it does far outweighs its eost, and though the community should lavish money on its hospital, it would but inadequately pay for the return it gets in good.

What I have been saying of hospitals applies, too, to medieal sehools. Medical education is enormously expensive but medical sehools, whatever their cost, are neeessary factors in the health problems of the eommunity and they with their research laboratories must be supported in order that there may be properly trained physicians to function in the eare of patients, whether at home or in hospitals, and that medical knowledge may progressively expand in order that treatment and prevention of diseases shall be better carried out in every eommunity of this broad land of ours.

The tale of medical researeh is a fascinating one. Research is a form of exploration. The type of man who, in earlier days, became an explorer of new lands and pushed out the bounds of eivilization into the wilderness, now is the investigator extending the boundaries of knowledge further and further into the realm of the unknown. Medical investigation, unlike much other investigation, often involves a better treatment of individual patients whose disease is being studied and so brings a direct and immediate result entirely apart from the ultimate value of sueh new knowledge as is obtained.

Almost every field of medicine has been illumined by investigation in the last deeade, and the progress made justifies the feeling that yet greater advanees are at hand, advances which will practically eradieate this disease or bring a eure for that one. These investigations, directly or indirectly, are vit ally important to the community and its citizens.

A little further south than here there has been a continuous fear of the introduction of an epidemic of yellow fever. Investigation, carried on by American Army surgeons, showed first that this disease was spread by a variety of mosquito who after biting a yellow fever patient could infect another man by biting him, provided a sufficient length of time had elapsed to allow of the then unknown organism of the disease to reach maturity in its insect host. This gave the first real clue to preventing the spread of yellow fever, namely, prevent the mosquito from having access to the yellow fever infected patient either by killing the mosquito or screening the patient.

Further investigation, this time by a Japanese scientist working in an American laboratory, has demonstrated the organism causing the disease and with this knowledge preventive vaccination has become a possibility and a more efficacious treatment is probable.

Equipped with this knowledge the Rockefeller Foundation has undertaken the cleaning up of all endemic foci of yellow fever from which spreads the disease in the world, and what is more important, they have practically accomplished this, so that it seems improbable that the cities of the United States will ever again face the serious health and economic situation of a yellow fever outbreak because there will probably be no yellow fever at any point from which it could reach our country.

There are in the United States probably 1,000,000 people suffering from diabetes, a disease due to deficient function of small structures in the pancreas. Within the last few years much improvement in the methods of managing this disease has come from investigations carried on in many different laboratories, which have given us much clearer ideas as to how to feed these patients in order to prolong their lives of usefulness.

Practically within the year, a method has been discovered by which the substance, whose deficiency is responsible for the disease, can be prepared from animals' pancreases in a form that may be injected into the human body so as to partly restore the deficient activity and so help to control the disease. This discovery has made possible a still better management of diabetes and already a number of lives have been saved by using this substance which previously could not have been saved. Moreover, many patients too weak from the disease to work have become again economically efficient. An actual cure is not yet at hand, but a great advance in management has been attained which will have an important part in a further lengthening of the period of efficient life of these many diabetics. If each of the 1,000,000 diabetics in the United States by these means live, let us say, a life of efficiency two years longer, and that is very probable, and each earns but $1,000 a year, the increased earnings by this process will be 2,000 times 1,000,000 or two billion dollars, which is about half the total expenditure of the United States Government last year. You see that discoveries with regard to diabetes have a not insignificant economic importance to diabetics and their families and indirectly to the community in which they live.

The annual death rate in the United States from circulatory diseases is approximately 100,000; certainly not less than this. Let us say that one-fifth of these carry life insurance averaging $500 each. I believe this is a very conservative estimate. Then these deaths cost the life insurance companies of the United States $10,000,000 a year.

In the last few years there has been a very active study of methods of prevention of heart disease. There have been improvements in methods of early diagnosis of circulatory disease and more efficient means of treatment are being evolved. If this new knowledge is applied a certain percentage of these deaths can be prevented and many more can be postponed from one to several years. To reduce this annual loss to insurance companies, to say nothing of the importance to the family and the community of a longer life for these individuals sick of circulatory disease, is a consideration of much importance.

I might go on and multiply examples but I will not use more of your time for I think I have made clear that medical investigation has a very marked value to the citizens of the country and is worthy of their support.

Can't you see as citizens of this community that there is a real obligation to maintain medical schools and laboratories and hospitals and colleges and high schools and secondary schools? They all constitute a sort of interlocking system. Hospitals are useless without doctors. Medical schools are needed to train them, but without colleges and high schools and secondary schools the men will be too ignorant to learn medicine. Well trained physicians are greatly handicapped if the people of the community are uneducated and they must have a community co-operation to carry on most of their preventive work. Better trained physicians in better educated communities can accomplish much for better health. Medical laboratories for investigation must be maintained and properly educated workers must be supported in order that greater and greater improvement may be made in methods of preventing and treating disease.

All of this costs money. Where shall it come from? From the community, first of all because the community receives the greatest benefit. The municipality should support schools, colleges, hospitals, medical schools and research laboratories. How, makes very little difference? By taxation, from a community chest, from private endowments; any method will serve. Perhaps if all methods are used most will be accomplished. The how is a local question; the community obligation applies everywhere.

For those of you who are graduating today there is much that you can do in helping in the progressive development of the community into which you go. This university is placing upon you its stamp of approval. Should it not look to you in return to help in making better and happier and healthier your communities? This is a real opportunity and in congratulating you on your university accomplishments I welcome you into that large opportunity for good that is open to all educated folk.

LUNG ABSCESS FOLLOWING TONSILLECTOMY: CONTINUED REPORT.*

By James Royden Peabody, Louisville

In November, 1922, I read a paper before this society on the subject of lung abscess following tonsillectomy and reported one illustrative case. (See Kentucky Medical Journal, March, 1923). The patient was a negro, aged twenty-nine, whose tonsils I had removed in April, 1921. At the time the case was reported the patient had lived nearly two years after development of the lung abscess.

Upon returning from my vacation the past summer (1923) I was informed that the patient had died about August 1st. His physician in Anchorage, Kentucky, told me that the man had been under his constant observation, that while he had never been able to work many of his former symptoms had disappeared, that he had practically ceased expectorating foul smelling sputum, but rapid pulse-rate had continued, and the man always complained of weakness.

An interesting feature about the case, which was called to your attention in reading my paper, was that the man had served in the army and had been discharged more than a year before being operated upon. Some physician who had examined him in the meantime made the diagnosis of pulmonary tuberculosis. However, Drs. Moore, Miller and others at the Louisville City Hospital were unable to demonstrate the tubercle bacillus nor any physical signs of the disease. I was asked whether his service in the army had anything to do with development of the lung abscess, to which I replied in the negative. As already stated the man had lived nearly two years after development of the lung abscess during which time he had persistently refused further treatment.

It may be interesting to state that when the physician was asked to see the patient at home there was a delay of about an hour, and when he reached the house he found that the man had just died from a terrific pulmonary hemorrhage. The doctor said he had never seen so much blood coming from the lung.

About two weeks ago the subject of lung abscess was discussed before a meeting of the Society of Physicians and Surgeons, of Louisville, at which time Dr. Morris Flexner reported two cases following tonsillectomy. Everybody had something to say about tonsillectomy and the discussion finally resolved itself into the relative merits and demerits of general and local anesthesia. Very little was said about the treatment of lung abscess.

Jackson has recently done considerable work with the bronchoscope in draining chronic abscesses of the lung. In the discussion it was mentioned that lung abscess was best managed by the production of artificial pneumothorax, but this should be done early before adhesions had formed as after that it did no good. Jackson has drained a great many lung abscesses through the bronchoscope with a fair degree of success.

I do not believe it will ever be determined just how lung abscess develops following tonsillectomy, i. e., whether from aspiration of septic material or from embolism. Dr. Charles W. Richardson (1912) was the first nose and throat man to call special attention to this subject, although it is stated in Osler's text book of 1901 that "abscess of the lung sometimes follows tonsillectomy." Richardson (1912) recorded several cases and stated his belief was that lung abscess following tonsillectomy was due to embolism. However, several years later (1922) he said he had changed his opinion and then believed lung abscess was caused by aspiration of septic material and not by embolism. In the meantime other cases were reported in different parts of the country and various opinions expressed as to causation.

Moore (1922) collected and reviewed two hundred and two cases of lung abscess following tonsillectomy. Of these thirty-nine patients were operated upon under local anesthesia, the remainder under general anesthesia. The question naturally arises, does local anesthesia completely abolish the reflexes so that material cannot be aspirated or swallow-

*Clinical report before the Louisville Medico-Chirurgical Society.

ed? The fact must be remembered that lung abscess has followed tonsillectomy under local anesthesia. Jackson says the swallowing reflex can be absolutely paralyzed by applying cocaine around the superior laryngeal nerve, and that material may reach the lungs by aspiration during tonsillectomy under local anesthesia.

When the case furnishing the basis for these remarks was originally reported I searched the literature and made inquiry among my colleagues in an attempt to determine the frequency with which lung abscess followed tonsillectomy, and whether the method of administering the anesthetic had anything to do with it. There seemed to be no consensus of opinion on either question. In my case the complication arose "like a bolt from the clear sky"; nothing occurred at the time of operation to suggest that lung abscess might later develop; the operation was performed under general anesthesia at the Louisville City Hospital; convalescence was attended by no untoward feature; the patient was dismissed from the hospital two days after operation. Seventeen days later he was readmitted with pulmonary symptoms indicating abscess, and this diagnosis was made by Dr. Moore and other physicians in the hospital.

After examining the literature at the time the case was reported I concluded lung abscess following tonsillectomy was due to aspiration; but further study has convinced me that the cause is embolism. I believe it is only fair, however, to consider that lung abscess following tonsillectomy may be due to either aspirated septic material or to embolism. I do not see how we can hope to definitely settle the question when a man of the standing of Richardson has changed his opinion within the period of a few years. Coakley has seen a few cases and believes the cause is embolism.

The next question which arises is, can this complication be avoided? There seems to be definite reasons why tonsillectomy should not be performed during an attack of acute tonsillitis. In the discussion before the Society of Physicians and Surgeons, however, some of the members advocated operating during an acute attack. Personally I believe this plan would markedly increase the chance of embolism, and we know serious hemorrhage sometimes follows operation in acute infections.

I believe preliminary treatment is of some importance. In the case reported the patient had a low grade infection and was under treatment two months before the operation. It was at first thought he might have syphilis, but the blood Wassermann was negative. If there existed anything to act as the predisposing cause of lung abscess it was not discovered. Perhaps we should have waited longer before operating.

Another question is, should tonsillectomy be performed under general or local anesthesia? It is the belief of many physicians that if a general anesthetic is used it should never be ether. Another feature to be considered is whether or not suction should be employed. Many throat surgeons say the suction apparatus should always be used. A general surgeon, Manges, of New York, has said lung abscess following tonsillectomy is due to the mechanical pressure apparatus used in the administration of ether. This is also the opinion of Clendenning and many others. However, it is not true because lung abscesses following tonsillectomy were reported long before that method of administering ether was ever used.

No one seems to know why lung abscess sometimes follows tonsillectomy, but the accident has occurred in the practice of the most careful and skillful operators. One author says it has never been known to occur in private practice, that abscess occurs only in charity cases where the operator is inclined to be careless. We know this is not true because many cases have occurred in private practice where there was no chance of carelessness, faulty operative technique, or faulty after-treatment.

DISCUSSION

L. W. Frank: If lung abscess following tonsillectomy is due to embolism, why are emboli never noted in other situations? There is just as much chance of having an embolic process in the kidney, spleen and other organs as in the lung. If lung abscess is an embolic phenomenon there certainly ought to be evidences of embolism elsewhere in the body. Furthermore, I believe these abscesses almost invariably occur in or near the center of the right lung.

In my opinion lung abscess following tonsillectomy is caused by aspiration of septic material and not embolism. The right lung is more likely to be involved than the left because the main right bronchus extends directly downward to the lung, there being no deviation in its course such as noted in the left bronchus.

Charles G. Lucas: In regard to the treatment of lung abscess by drainage through the bronchoscope: Not long ago I had the opportunity of seeing Prof. Jackson and his assistants at the Jefferson medical, practice this method in a number of cases. It is astonishing the ease with which the procedure is executed. A local anesthetic is not used in children under the age of twelve. The degree of relief obtained by this procedure was remarkable.

I saw several patients subjected to bronchoscopic drainage for lung abscess, and also four patients who had been under treatment for some time. The results secured were excellent.

S. G. Dabney: The latest statistics show that lung abscess follows tonsillectomy sixteen times more frequently after general than after local anesthesia. I believe these statistics are not far wrong.

I recall the paper mentioned by Dr. Peabody, published several years ago, in which the author reviewed two hundred and two cases of lung abscess following tonsillectomy. It was an extremely interesting compilation.

Like Dr. L. W. Frank, I cannot help believing that in the majority of cases lung abscess following tonsillectomy is due to aspiration of septic material. Much may depend upon circumstances surrounding the operation. It is not uncommon for the patient to partially recover from the effect of the anesthetic before operation is completed which favors aspiration of material into the lung. The anesthetist is of tremendous importance in these cases, and one should always be selected who is accustomed to administering anesthetics for this particular purpose.

I also saw the statement that abolition of the laryngeal reflex could be produced by local application of cocaine. I am a little doubtful about this. The superior laryngeal nerve furnishes sensation to the larynx but not above it. Unless enough cocaine is applied to allow some of it to gravitate into the larynx, it hardly seems that the laryngeal reflex would be thereby abolished. I think abolishment of this reflex would be very rare from the application of cocaine locally. It is a common observation that during tonsillectomy under local anesthesia the patient coughs showing that the reflex is not abolished.

I believe it is a very good plan to have the head of the patient lower than the chest during tonsillectomy, especially where there are any indications that trouble may ensue. However, lung abscess usually occurs without other complications or indications of trouble.

I do not believe there is much in the theory of embolism. While I am aware many excellent observers hold that opinion, I still think lung abscess is caused by aspiration of septic material. There are two views concerning this: First, that the patient inhales blood during the operation and infective material thus reaches the lung: Second, that small, cheesy, septic masses squeezed from the tonsil during operation are drawn downward into the lung, and one of these septic masses is the beginning of lung abscess. I rather lean toward the latter view personally.

I have seen only one lung abscess following tonsillectomy. That occurred in a patient under the care of Dr. J. Rowan Morrison, a young married woman who never had tuberculosis although she had always been a little uneasy about it. A strange feature was that the patient had a premonition before tonsillectomy that she would have a lung abscess afterward and so expressed herself prior to operation. Tonsillectomy was attended by no difficulty, she took a general anesthetic without untoward incident, and was dismissed from the hospital in two days. There was no evidence of trouble in the lung or chest. A few days later she developed an abscess of the right lung. Fortunately she made a good recovery; she has gained twenty pounds in weight and has remained in excellent health.

I do not believe forcing the anesthetic by the pressure apparatus has anything to do with the production of lung abscess. In my opinion suction does not help very much in preventing the inhalation of septic material from the tonsil.

I have always thought something might be accomplished by preliminary treatment: For instance, a few days hence I expect to remove the tonsils of a young man under local anesthesia. The patient has been under observation for more than a week. He comes to the office each day and the tonsillar crypts are cleansed as thoroughly as possible thus getting rid of the septic material which might later produce lung abscess. I believe that is an important step in the preliminary treatment and have practiced it as routine during the last two or three years.

To summarize the measures which I believe important in the prevention of lung abscess: First, get the tonsils clean before tonsillectomy is performed; second, during the preliminary treatment have the patient use a tooth brush three or four times a day to keep the gums and teeth clean; third, insist upon the use of an antiseptic mouth wash several times daily; fourth, have the patient come to the office every day for several days to cleanse the tonsils thoroughly using a small quantity of Lugol's solution after cleansing.

I am opposed to tonsillectomy during an acute attack of tonsillitis or so long as the patient has fever. There is one exception that might be made to this: we occasionally see a patient with chronic tonsillar infection who has fever extending over weeks or months, and the only way we can get rid of the fever is to remove the focus of infection, i. e., the tonsils.

Stuart Graves: In the routine examination of microscopic sections of tonsils in at least eight hundred cases, very few have shown the presence of bacteria in the crypts. There is practically always a certain amount of chronic inflammation beneath the epithelium lining the crypts. Occasionally sections have shown acute inflammation. Not infrequently in acute and subacute tonsillar infection one will find clumps of bacteria so large that they appear as granular masses.

John Walker Moore: I believe Dr. Peabody takes the correct view in regard to the cause of lung abscess following tonsillectomy. It occurs less frequently from aspiration of infectious material into the lung than from embolism. It is significant that lung abscess generally develops within three or four days after tonsillectomy. I believe, however, in Dr. Peabody's case abscess was not noted for two weeks. If septic material existed in the bronchus there would certainly be a reaction before the expiration of two weeks; nature would force the patient to expectorate and thus expel the septic substance. It has been noted that very few patients cough after tonsillectomy.

I recall having performed autopsies on soldiers dying from gunshot wound of the thigh followed by septic emboli. The femoral vein was ligated well within the necrotic tissue. Examination showed a clot in the vein one and a half inches in length; this had become infected and gradually softened; septic emboli were thus detached and carried into the blood stream with the production of septic infarcts in the lung, spleen, etc. It seems perfectly reasonable to suppose that small veins of the tonsil which are not ligated may contain thrombi which become infected and when carried into the blood stream cause abscess in the lung or anywhere else for that matter.

Dr. Beasley, of Philadelphia, states that in his camp during the war patients with scarlet fever had their tonsils removed immediately regardless of the stage of infection, and not one of these soldiers developed acute nephritis. In other camps, where tonsillectomy was not practiced there were many cases of acute nephritis.

Ben Carlos Frazier: It so happens that nowadays I do not see many tonsillectomies, but am occasionally called upon to administer the anesthetic for such operations. I believe chloroform is preferable for a general anesthetic in tonsillectomy as it excites much less secretion.

I have never seen a lung abscess, nor in fact any other serious complication, following tonsillectomy. I have seen serious secondary hemorrhage in one case, a woman aged thirty years, but even this might be classified as continuation of the primary hemorrhage. I was recalled to the hospital five hours after operation, and again three hours later, on account of hemorrhage. Bleeding was finally controlled and the patient made a good recovery.

In my opinion lung abscess following tonsillectomy is caused by aspiration or inhalation of septic material.

J. Rowan Morrison: In the case Dr. Dabney mentioned, the patient being under my care, tonsillectomy was carefully and skillfully performed. The patient had a premonition that she would later have a lung abscess which proved correct. Fortunately she recovered and has remained well.

The subject of lung abscess is of interest to every practitioner of medicine. It is probable such abscesses occurred after tonsillectomy in the early days when the so-called guillotine method was in vogue. While Dr. Richardson first brought this subject prominently before the profession, probably long before that time cases of lung abscess were diagnosed as aspiration or ether pneumonia, etc. It is very difficult to determine the presence of lung abscess based on the clinical signs. Such authorities as Norris and Loudes say that in the majority of cases the diagnosis is not made until the patient begins to expectorate large quantities of sputum foul smelling or not. The roentgen-ray often shows more in these cases than can be determined by physical examination, but interpretation of the plate may be difficult as it is not always clear what the condition is.

Statistics show that lung abscess occurs once in about three thousand tonsillectomies; therefore it is not a common complication. Cases have been reported following local as well as general anesthesia. A greater number of tonsillectomies have been performed under general than local anesthesia, and as lung abscess may follow either method, I do not see how we can conclude that local anesthesia will prevent any individual from developing lung abscess. I do not believe we ought to try to decide which method of anesthesia should be used by the incidence of lung abscess; this is a question which must be decided by the operator and the individual to be operated upon.

I have always thought lung abscess following tonsillectomy was caused by aspirated septic material, but it may also be caused by embolism, especially after what Dr. Moore says. There are so many infected tonsils and tonsillectomies that it is a wonder a greater number of lung abscesses do not occur because in every case a large amount of septic material must have a chance to enter the lung.

I wish the **throat** surgeons would tell us whether under local anesthesia the patient can cough and aspirate infectious material into the lung or is the reflex abolished? This seems to be an important point. Local anesthesia may weaken the reflex, but is it entirely abolished? It not infrequently happens that after tonsillectomy the patient has a paroxysm of coughing shortly after being returned to bed.

I believe it is the general idea that it is bad practice to operate upon acutely inflamed tonsils. However, there are exceptions to this rule. Dr. Dabney will recall having performed tonsillectomy upon a man who had acutely inflamed tonsils and wisely so I think because the patient had acute rheumatic fever with endocarditis beginning, and the only source of infection that could be demonstrated was diseased tonsils. The patient had a temperature of 102° F. when the operation

was performed. Recovery was prompt and satisfactory with very little permanent damage to the heart. I believe it would have been otherwise if his tonsils had remained longer.

I. A. Lederman: My ideas coincide in the main with those expressed by Dr. Dabney. There are one or two points, however, which should be emphasized. First, is lung abscess following tonsillectomy caused by aspiration of septic material or embolism? I think it is only fair to give each a share of the blame as there seems no reason why abscess should not occur from both causes. If due entirely to infarction why should the infarct always occur in the lung? I have never heard of embolus in any other part of the body following tonsillectomy, abscess always occurring in the lung. I cannot believe that factor alone is the cause of lung abscess in one hundred per cent of cases.

As to lung abscess following tonsillectomy under local anesthesia: It does seem probable this should be due to embolism. Anesthesia cannot be limited to the tonsils. The pharynx, epiglottis and larynx are also anesthetized and inspiration of septic material into the trachea may occur in that way.

As to operating on acutely inflamed tonsils: Drs. Dabney and Peabody will doubtless recall an article written some years ago by Higgins, of Iowa, advocating tonsillectomy during acute tonsillitis and also in acute quinsy. While none of us can see the rationale of this procedure, there are cases in which tonsillectomy must be performed in the acute stage of tonsillitis. I do not see how we can draw any sharply defined lines and say that we must not operate until a certain number of days have elapsed, for instance until seven days after the tonsil has become normal. In acute arthritis, for instance, where the focus of infection is in the tonsil, I think tonsillectomy should be done promptly. Early operation is demanded to cut short the absorption of poisonous products.

A few weeks ago I removed one tonsil of a patient who had peri-tonsillar abscess; it was an acute case in which there was a recurrence every few days; after seeing the patient through several recurrent attacks I advised tonsillectomy. The tonsil was greatly inflamed, the pillars infiltrated, and dissection was difficult. Operation was completed, however, without untoward incident and there has been no return of the quinsy.

While no rule can be formulated to which there will not be exceptions, generally speaking I agree with what has been said about the inadvisability of performing tonsillectomy during the acute stage of tonsillitis.

J. R. Peabody (closing): I am glad my continued report of the case of lung abscess following tonsillectomy has stimulated such an instructive discussion. The question is not yet settled nor do I believe it ever will be just how lung abscess occurs following tonsillectomy. In the summary of my paper read before this society I stated that it might occur in two ways, viz, (a) from aspiration or septic material, and (b) from embolism. At that time I believed that in the majority of cases abscess was due to aspiration but have since changed my opinion and now believe embolism is the most frequent cause of lung abscess following tonsillectomy.

The author of an article published in the Archives of Internal Medicine about two years ago stated that sepsis was the primary cause of lung abscess. We know there are an enormous number of bacteria present in the month and when the tonsils are enucleated there may be a severe reaction. I have never seen a case in which there was not considerable exudate in the fossa.

Several years ago it was stated that lung abscess was always caused by a piece of tonsil getting into the lung during the operation, and the author of this statement used the bronchoscope in an attempt to locate the tonsillar fragment. Of course none of us ever permit any of the tonsil to slip downward into the lung during tonsillectomy, but it is possible for septic material or infected blood to enter the larynx.

As to anesthesia and tonsillectomy: There is great divergence of opinion among operators in different parts of the country. For instance in St. Louis the majority of operators will not perform tonsillectomy under local anesthesia because of the fear that lung abscess might later develop. In other sections of the country local anesthesia is used almost exclusively.

In regard to performing tonsillectomy in the presence of acute infection: While as stated in the discussion this may be bad practice, it is sometimes necessary. A recent author has advocated tonsillectomy in the acute stage of scarlet fever. That is a suggestion which is entirely new to me. In acute cases we all recognize the increased danger of hemorrhage and dissection is also made difficult because of adhesions in acute infection.

There are certain cases in which tonsillectomy is permissible during acute infecion: I recall the case of a physician's wife who had acute tonsillitis, acute arthritis, acute endocarditis, and was growing gradually worse. Rapid improvement followed tonsillectomy. The greatest danger in acute infection is hemorrhage. If bleeding occurs from a single vessel it may be ligated or clamped, but when oozing occurs from the entire tonsillar fossa difficulty may be experienced in controlling it. I have seen two or three cases of serious secondary hemmorrhage following tonsillectomy performed in the presence of acute tonsillitis.

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Compiled by L. H. South

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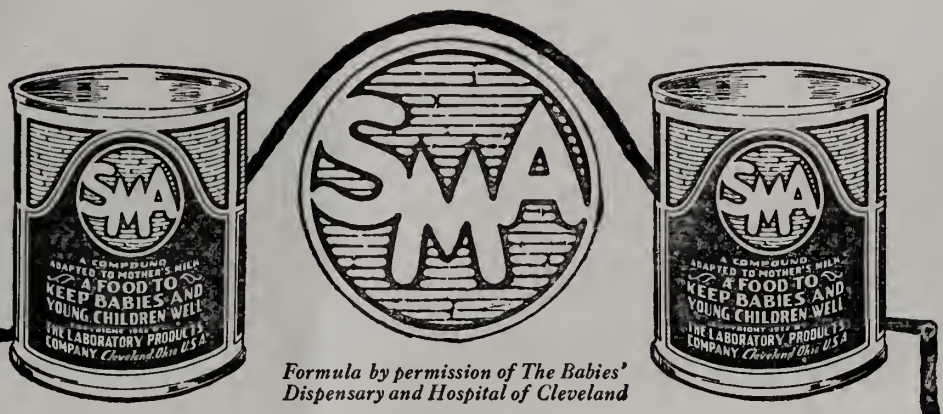
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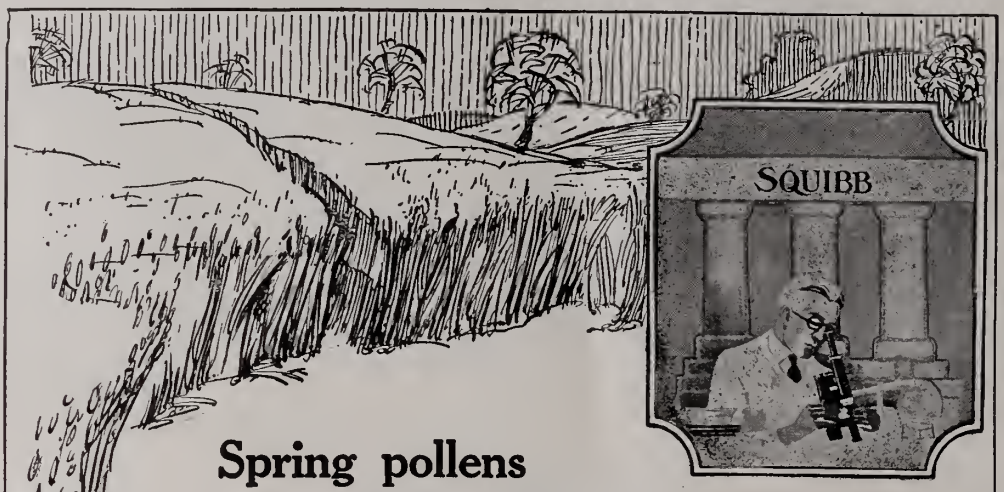
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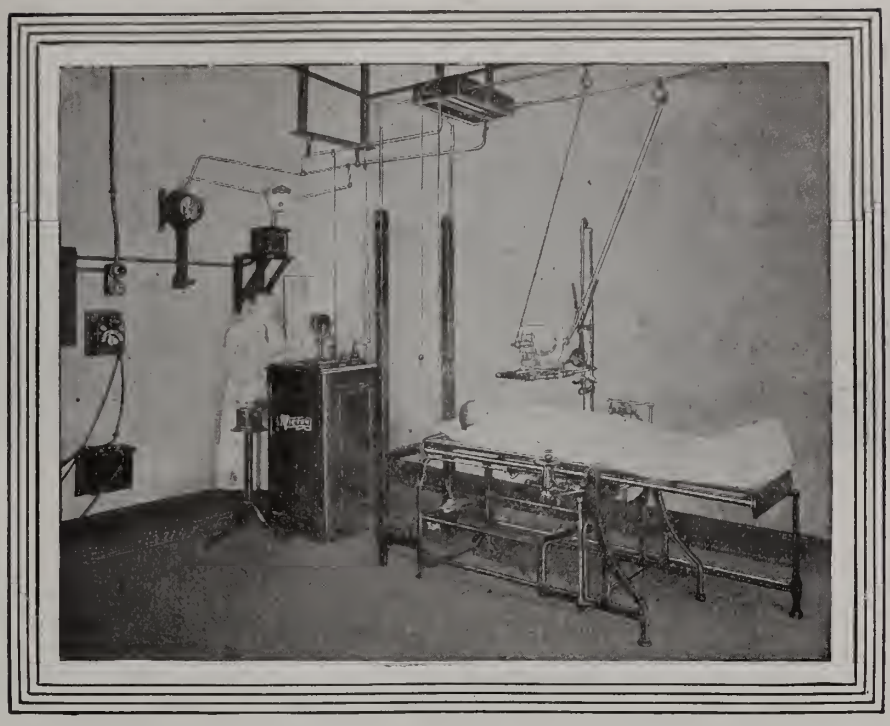
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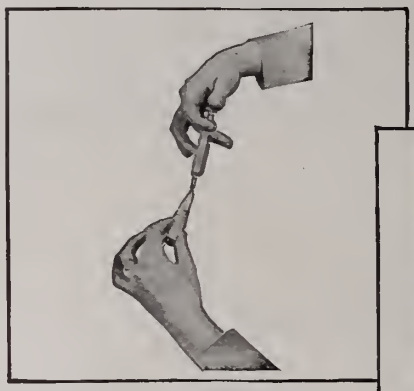
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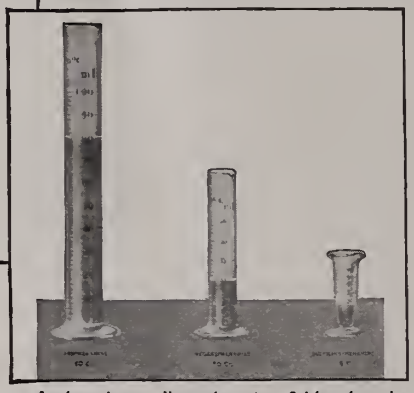
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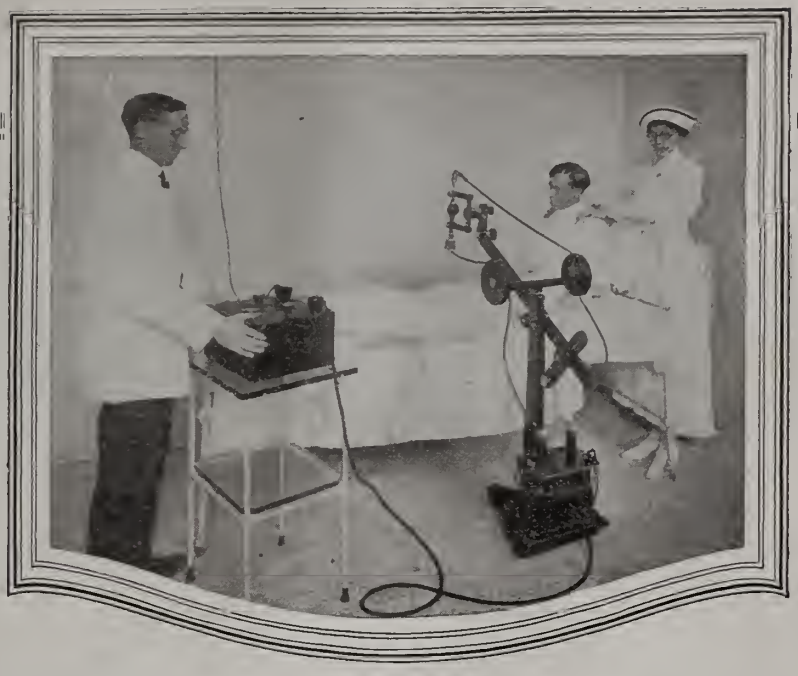
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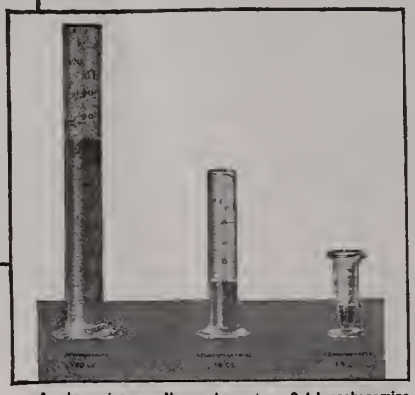
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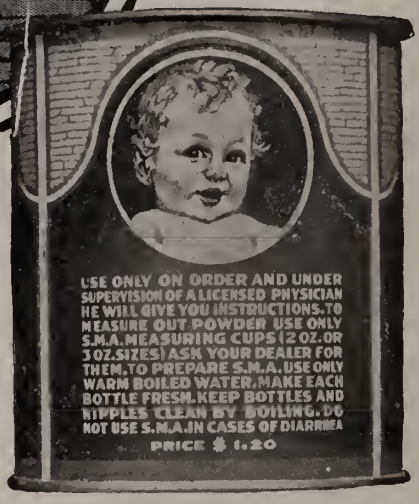
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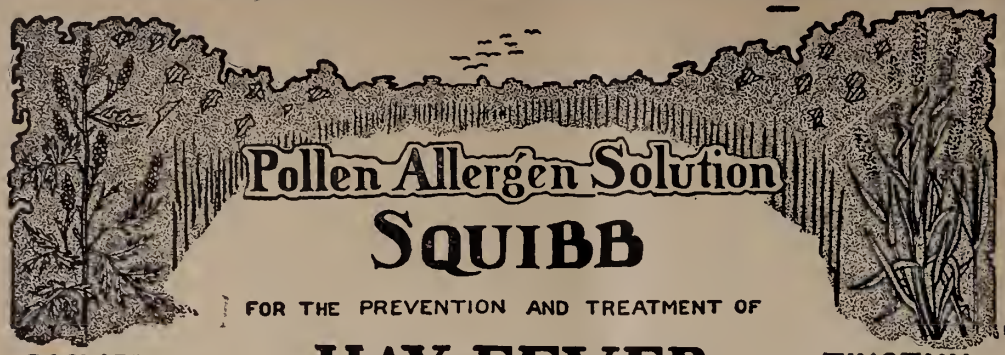
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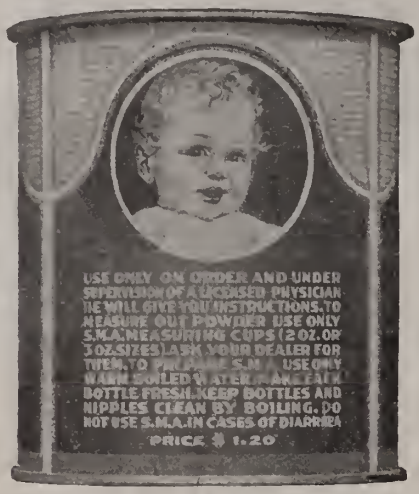
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Foster's Examination of Patients

The one aim of Dr. Foster in writing his book was to present methods of determining facts upon which accurate diagnosis rests. Without such facts and their correct interpretation the most brilliant discoveries in therapeutics or the most skillful surgery avail nothing. The development of laboratory methods has somewhat directed attention away from the fundamentals of sound diagnostic practice—trained senses of touch, sight and hearing. Dr. Foster's book reverts sharply to these fundamentals, believing that a laboratory test but rarely reveals alone the nature of the disease. Usually it serves only to support other evidence—a bit of data like other signs to be weighed in forming an opinion. Laboratory tests, however, are in every instance detailed. The work is divided into the following sections: Theory of diagnosis, assembling of data, physical examination, system examinations, nervous system, throat and ear, joints and extremities, breast, tuberculin tests, Schick tests.

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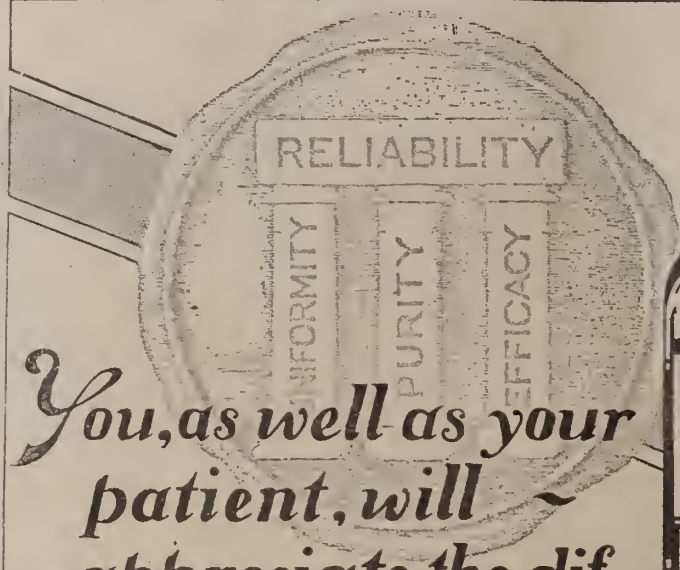
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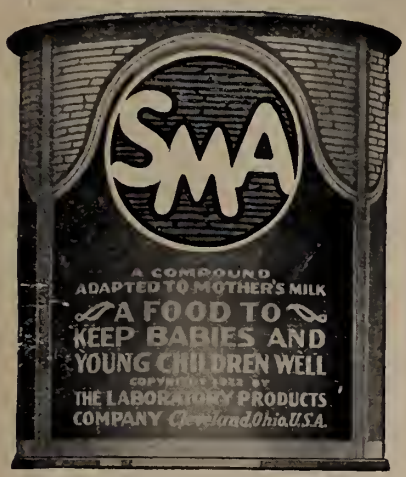
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